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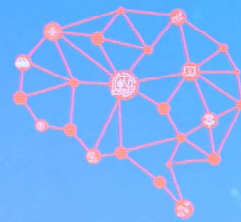


STANDARDS and TRADE
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Atoms for Peace
and Development

VF | Vienna Food 20
SF | Safety Forum 25
The Potential of Digitalization



VF | Vienna Food 20 **SF** | Safety Forum 25

Outcome Report

SOMALIA

HUNGARY

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FORUM OVERVIEW



8
Sessions

2
Soulution
talks



72
Speakers



327
Participants

36%
Public

26%
Private

35%
IGO/NGO

3%
Academia



55.5%
Male Participants

44.5%
Female Participants

BACKGROUND CONTEXT

The Vienna Food Safety Forum 2025, organized by UNIDO with support from DAFF Australia, FSSC, IAEA and STDF was held from 10 -12 June 2025. in Vienna. The forum brought together more than 300 participants representing a community of regulators, industry leaders, scientists, and policymakers to discuss the modernization of food safety systems. Centered on the theme of harnessing digitalization and artificial intelligence, the forum explored how new technologies can strengthen global food safety, ensure fair trade, and support more resilient supply chains. It served as a platform for exchanging experiences, showcasing innovations, and building partnerships, with a strong focus on practical implementation and reducing the digital gap between high-income countries and LMICs.

The main topics of discussion included integrating risk-based regulatory approaches powered by data analytics and AI, adopting global data standards for traceability to improve interoperability,

advancing the electronic exchange of sanitary and phytosanitary (SPS) certificates, and leveraging machine learning and digital surveillance tools to predict and respond to food safety risks. Participants also explored frameworks for secure data sharing, ethical principles for AI in food safety oversight, and the critical role of partnerships and capacity-building to ensure that digital solutions are inclusive and globally harmonized.

This outcome report has been developed to capture the key discussions, conclusions, and commitments that emerged from the Vienna Food Safety Forum 2025. It serves as both a record of the event and a resource for participants and stakeholders who wish to build on its momentum. By consolidating insights from all sessions, this report aims to provide a clear reference for policymakers, industry leaders, and partners as they implement actions to modernize food safety systems and close the digital divide globally.



EVENT SUMMARY

Summary of Day 1 – 10 June 2025

Opening Ceremony – Vienna Food Safety Forum 2025

Opening Remarks – Mr. Gerd Müller (Director General, UNIDO):

Mr. Müller delivered a recorded message highlighting food safety as a pillar of sustainable industrial development and a key condition for food security. He cited staggering global figures 600 million foodborne illnesses and 420,000 deaths annually and emphasized that these are not mere statistics but real lives lost, particularly children. He introduced UNIDO's Food Safety Approach 2.0, centered on digital innovation, risk-informed systems, inspector training, and support to agribusinesses. Mr. Müller called for new partnerships and solidarity, underlining the forum's role in uniting governments, industry, and international organizations toward shared food safety solutions.



Remarks – H.E. Mr. Vitaliy Koval (Minister of Agrarian Policy and Food, Ukraine):

Minister Koval spoke powerfully about Ukraine's resilience in maintaining food production and safety during war. Reflecting on Ukraine's historical famine and current crises, he emphasized how digitalization has been critical for managing food security and maintaining public trust. He showcased Ukraine's State Agrarian Register, which now includes over 204,000 farmers and integrates models like e-planting, enabling data-driven distribution, financial access, and transparency. He stressed that food should be a tool of support, not a weapon of war, and called for international unity and investment in open, trustworthy digital systems.



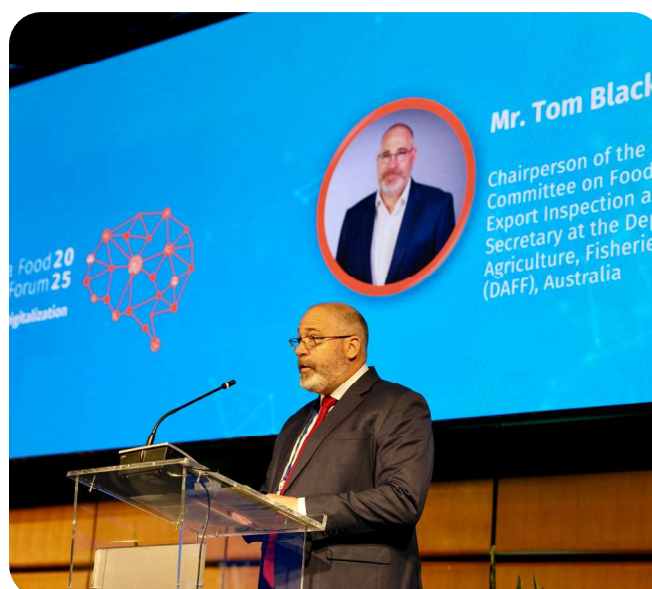
**Remarks – H.E. Mr. Tareq Alhouby
(Chairperson, National Food Safety
Authority, Egypt):**

Mr. Alhouby highlighted Egypt's national digital transformation in food safety, including the development of an integrated digital platform covering inspections, risk analysis, traceability, and communication. He also detailed progress in implementing Laboratory Information Management Systems (LIMS) to ensure real-time data sharing and faster regulatory decisions. He framed these efforts as part of Egypt's broader vision of modernization and public health protection, and closed by thanking UNIDO for its leadership in organizing the forum.



**Remarks – Mr. Tom Black (Chairperson,
Codex Committee on Food Import and Export
Inspection and Certification Systems / DAFF
Australia):**

Mr. Black underscored Australia's commitment to food safety digitalization and its support for UNIDO's convening efforts. He provided a detailed overview of Codex's recent work through the CCFICS, including adopted guidance on paperless exchange of official certificates (2021), remote audits, and updated traceability principles. He also introduced ongoing work on digitalization principles for national food control systems. Mr. Black stressed the importance of making digital systems interoperable and reducing barriers to trade while enhancing public health and consumer trust.



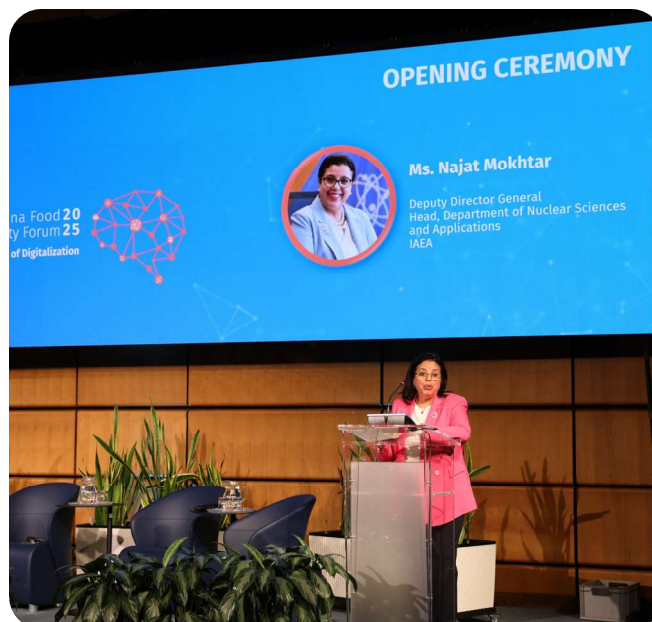
**Video Message – Mr. Alan Azgele
(Chairperson, Codex Alimentarius
Commission):**

In his recorded address, Mr. Azgele highlighted the relevance of the forum's theme digitalization and linked it to this year's World Food Safety Day focus: "Food Safety: Science in Action." He spoke about Codex's evolving role in using digital technologies like AI, machine learning, and predictive modeling to strengthen standards and enforcement. He emphasized that science must be actionable, inclusive, and trusted, calling for cross-sector collaboration to turn innovation into impact. He concluded by reaffirming Codex's commitment to science-based, consensus-driven solutions.



Remarks – Ms. Najat Mokhtar (Deputy Director General, IAEA):

Ms. Mokhtar emphasized the power of digital tools anchored in reliable data and nuclear science to transform food safety systems. She described the IAEA–FAO Atoms for Food initiative, which merges digital and nuclear technologies to deliver traceability, contaminant detection, and fraud prevention. She shared real-world impacts, such as restoring Benin’s pineapple exports, building authenticity databases in Costa Rica, and expanding food fraud detection. She warned that digitalization without lab quality is fragile, highlighting proficiency testing and laboratory information systems as crucial enablers. She called for inclusive, partnership-based digital systems that benefit all countries.



Video Message – Mr. Jean-Marie Paugam (Deputy Director General, WTO):

Mr. Paugam emphasized that food safety enables trade and shared data on how digital SPS solutions, like the STDF-funded ePhyto system, have cut costs and reduced delays in developing countries. He noted WTO members are working to modernize trade rules to reflect digital realities, including in e-commerce and digital certification, and highlighted how this forum contributes to shaping future trade frameworks. He reaffirmed WTO’s support for inclusive, technology-driven food systems that expand market access, particularly for small businesses in developing economies.



Closing Remarks – Mr. Gunther Beger (Managing Director, Innovation and Economic Transformation, UNIDO):

Mr. Beger welcomed participants to Vienna and echoed Mr. Müller’s call for transformation. He outlined UNIDO’s Food Safety Approach 2.0, which emphasizes capacity-building in food businesses, strengthening competent authorities, and fostering partnerships for advocacy and digital investment. He tied food safety to development, citing 700 million people still facing hunger and noting that food safety bridges public health, trade, and industrial growth. He reaffirmed UNIDO’s role as a convener and thanked long-standing partners, including the Government of Australia, for their support in making the forum possible.



Keynote Presentation: Digitalization as a Catalyst for Transforming Food Safety Systems

Speaker:

Mr. Gábor Molnár (Industrial Development Officer, UNIDO)

Overview:

Mr. Molnár opened the forum by outlining how digitalization can fundamentally modernize food safety systems, shifting from reactive compliance to predictive, risk-based oversight. He emphasized that digital tools when applied effectively can improve traceability, data sharing, and real-time monitoring, but warned that transformation must go beyond technology to include institutional change, capacity building, and strong governance.

Key barriers include outdated regulations, limited interoperability, and unequal access in low- and middle-income countries. Mr. Molnár pointed to emerging solutions like IoT monitoring, cloud-based analytics, remote audits, and e-certification systems, alongside AI applications such as predictive outbreak detection. He stressed the need for structured, secure data ecosystems and inclusive digital strategies.

He proposed five priorities: modernizing regulatory frameworks, fostering international data collaboration, strengthening capacity in LMICs, advancing risk-based decision-making, and developing global standards on interoperability and data governance. His message was clear: digitalization must serve as a tool for equity, transparency, and food safety for all.



Session 1: Food Safety Regulatory Reforms: Leveraging Digitalization and Artificial Intelligence

Moderator:

Mr. Tom Black (Chairperson, Codex Committee on Food Import and Export Inspection and Certification Systems – CCFICS; First Assistant Secretary, DAFF Australia)

Panelists:

Mr. Amare Ayalew (Senior Advisor, African Union Commission)

Mr. Geoff Ogle (Chief Executive, Food Standards Scotland)

Ms. Deneswaree Mohun (Head, Non-Tariff Measures Division, AfCFTA Secretariat)

Mr. Donald Prater (Principal Deputy Director, Human Foods Program, U.S. FDA)

Ms. Ravinan Chamchalerm (Director, Agricultural Commodity and Food Standards Policy, Thailand)



Discussion highlights:

The panel explored how digital innovation is reshaping regulatory frameworks and oversight models in both advanced and developing contexts. Mr. Prater emphasized the U.S. FDA’s New Era of Smarter Food Safety blueprint, including predictive analytics and smarter traceability to modernize oversight. Mr. Ogle presented Scotland’s progress in linking food crime intelligence and surveillance platforms through digital risk-based models. Ms. Mohun discussed the AfCFTA’s efforts to harmonize SPS measures and enable trust in regional trade through interoperable platforms.

Ms. Chamchalerm shared Thailand’s integration of blockchain and QR-coded traceability in fresh produce and seafood supply chains, aimed at meeting international expectations and domestic confidence. Mr. Ayalew underscored the AU’s regulatory challenges in digitizing systems amid uneven infrastructure and the need to align national food laws with regional digital standards. Several speakers raised concerns around uneven regulatory maturity, the lack of interoperable digital tools, and the difficulty of building institutional and inspectorate readiness. Another strong point of discussion was data governance: ensuring secure, equitable, and sovereign control over regulatory and commercial data flows.

Conclusion:

The panel agreed on the urgent need to modernize food safety laws to incorporate digital and AI-based approaches, not just at the technical level but through enabling policies. There was consensus on the need for mutual recognition frameworks, digital equivalence agreements, and regional alignment to avoid trade disruptions. The session also called for investment in inspector training, risk modeling, and legal provisions to institutionalize digital evidence in food control. Importantly, the group endorsed the development of international digital food safety principles through Codex, and encouraged coordinated donor support for Africa and ASEAN digital infrastructure and capacity-building programs.



Solution Talk:

Moderator:

Mr. Jason Slater (UNIDO), Chief, Division of Digital Transformation and Artificial Intelligence



Presentations:

Four panelists were invited to present actionable, tech-driven solutions addressing critical bottlenecks in food safety systems. The session was framed around how such innovations could be scaled to the Global South.

- **Ms. Mattie Yeta**, Chief Sustainability Officer, CGI Inc., outlined CGI's digital architecture supporting data-driven food safety. She emphasized the six major pillars of their systems: data collection (via web scraping, satellite, AI), data storage optimization, large-scale data processing, analytics, data assurance, and governance. She provided real-world examples like their collaboration with Food Forensics on AI-enhanced traceability and authentication, and the use of satellite and digital twin technologies for risk-based food system forecasting.
- **Mr. Brendan Ring**, Commercial Director, Creme Global, showcased data-sharing platforms developed for clients like the US FDA and the Food Industry Intelligence Network. He described the company's "data trust" approach that enables confidential, anonymized data pooling among stakeholders, and predictive modelling to assess contamination risks. Brendan stressed that the shift from siloed data toward shared AI-driven insights is key to improving food safety while enhancing trade flow and inspection accuracy, particularly for perishable goods.
- **Mr. Mark Flanagan**, CEO of Safe to Trade, presented a voluntary third-party assurance scheme that leverages software and standardized inspection data to improve compliance in hospitality and food service sectors. He discussed the challenges faced by UK regulators in absorbing industry-generated data and emphasized how harmonizing audit standards and building AI into software-as-a-service platforms can yield actionable insights both for businesses and authorities.
- **Ms. Dorina Nati**, Industrial Development Officer at UNIDO, introduced the Standards Compliance Analytics platform. The tool analyzes global border rejection data across five major import markets to pinpoint systemic trade bottlenecks and guide national interventions. Case studies from Albania, Indonesia, and Georgia illustrated how rejection trends (e.g., pesticide residues, mislabelling, contamination) are being translated into national reform strategies, infrastructure improvements, and AI-supported solutions.

Discussion highlights:

The discussion focused on how to scale these solutions in the Global South. Panelists emphasized that barriers such as infrastructure, digital literacy, data trust, and sustainability of platforms remain significant. Brendan Ring noted the high mobile penetration in developing regions could be leveraged for bottom-up data capture, while cloud-based analytics lower entry costs. Mattie Yeta emphasized co-creating modular services with local stakeholders and providing hosting/security solutions through CGI's infrastructure. Mark Flanagan stressed tailoring solutions for regulators, businesses, and consumers highlighting that third-party schemes help operators communicate compliance to increasingly safety-conscious consumers. Dorina Nati underscored that complex platforms must be simplified through AI to be usable in capacity-constrained contexts, and warned against deepening the digital divide.

Conclusion:

- Broad consensus that scalable, cloud-based digital tools, built with open standards and localized user interfaces, can support LMICs in building resilient food safety systems.
- Stakeholders endorsed the role of public-private partnerships in developing such solutions and advocated for funding to build digital skills and infrastructure.
- The use of predictive analytics, digital twins, and remote inspection tools were identified as promising for both regulatory and trade facilitation functions.
- UNIDO and partners committed to exploring proof-of-concept pilots in priority countries.



Session 2: Data-powered Risk Prioritization – Enhancing Food Safety Management

Moderator:

Mr. Matt Kovac (CEO, Food Industry Asia)

Panelists:

Ms. Ludovica Vezzani, Global Head of Regulatory and Scientific Affairs, Nestlé

Mr. Eric Samson, Standards & Technology Diplomat, Corporate Standards Group, Microsoft

Ms. Antonia Bruhn, Senior Manager Public Policy DACH, Amazon Web Services (AWS)

Mr. Marcello Carmignani, Director Operational Excellence, Deloitte

Ms. Yu Zhen Loi, Deputy Director, Operations Policy & Development Department, Singapore Food Agency



Discussion Highlights:

The session focused on the transformative role of digitalization and AI in risk-based food safety management. Panelists emphasized that real-time analytics, predictive modeling, and interoperable data systems are enabling regulatory agencies and the private sector to shift from reactive inspections to proactive risk mitigation. Several examples were given of successful implementation of integrated data platforms and digital hazard monitoring tools, used to prioritize resources and target high-risk actors in the supply chain.

One key theme was the challenge of navigating fragmented legacy systems and unstructured data across agencies and jurisdictions. Speakers noted the need for governance frameworks that allow secure, policy-driven data sharing while respecting data sovereignty and privacy. The concept of federated “data spaces” was introduced as a promising mechanism to enable collaboration without requiring centralization.

The discussion also acknowledged the barriers to widespread adoption of AI, particularly in small- and medium-sized enterprises. These included lack of technical expertise, uncertainty around emerging regulations (such as the EU AI Act), and limited organizational readiness. Panelists stressed the importance of building AI literacy among both technical and non-technical staff and making pre-trained tools accessible while ensuring data confidentiality. There was a strong emphasis on the need to re-engineer institutional processes not just layer technology on top of outdated workflows.

Conclusion:

- Broad agreement that AI and data tools can help regulators and industry actors transition to predictive, risk-based food safety models.
- Endorsed the development of interoperable, cloud-based systems to unify inspection, licensing, and surveillance data for better prioritization.
- Recognized that governance, trust, and legal clarity are essential to enabling safe and effective data sharing.
- Highlighted the importance of workforce transformation: investing in digital upskilling and AI-readiness for both regulators and businesses.
- Called for collaborative pilots between public and private actors to test and scale responsible AI in food safety.



Session 3: Putting Theory into Practice – Transforming Food Regulatory Practices through Digitalization

Moderator:

Mr. Samuel Godefroy (President, International Union of Food Science and Technology – IUFoST)

Keynote Presentation:

Ms. Sarah Cahill (Secretary, FAO/WHO Codex Alimentarius Commission) delivered the keynote, emphasizing the importance of aligning digital innovation in food safety with Codex principles. She underlined that the transformation of regulatory systems must preserve transparency, inclusiveness, and scientific integrity while accelerating responsiveness and adaptability. Codex is already integrating digital considerations into its guidance, such as with electronic certification and remote audit frameworks, but further international cooperation is needed to ensure digital solutions support, not fragment, global harmonization.

Panelists:

Ms. Ina Schneider, Scientific Officer, BVL, Germany

Mr. Parthiban Muthukumarasamy, Executive Director, International Programs, Canadian Food Inspection Agency (TBC)

Mr. Chris Elliott, Professor of Food Safety, Queen's University Belfast

Ms. Julie Pierce, Director of Information & Science, UK Food Standards Agency

Mr. Vidal Zapparoli Melo, Professor, University of São Paulo (USP), Brazil



Discussion Highlights:

The session focused on operationalizing digital transformation in regulatory systems, moving from conceptual frameworks to real-world implementation. Speakers shared national and institutional experiences where digital tools are already being integrated into food safety enforcement, surveillance, and cross-border collaboration.

Discussion highlighted both structural and cultural challenges. Panelists stressed that transforming regulatory practices goes beyond adopting new tools, it involves rethinking how inspection data is collected, analyzed, and acted upon. One central theme was the need to redesign workflows and policies in tandem with tech deployment to avoid digitizing outdated inefficiencies.

Interoperability was raised as a major hurdle, particularly when food safety systems must coordinate across multiple government agencies or international partners. Public trust, inclusiveness, and the need to maintain regulatory legitimacy while increasing speed and efficiency were also emphasized.

Academic voices emphasized the role of risk-based prioritization and evidence synthesis, and the necessity of sustained investment in digital infrastructure in LMICs. One strong point was that digitalization should not increase the burden on food businesses, especially smallholders, but rather serve to streamline their compliance path and improve regulatory clarity.

Consensus and Points Taken:

- Endorsed the concept that digital transformation in food safety regulation must be embedded in institutional reform, not treated as a technology add-on.
- Agreed on the importance of interoperability frameworks at both national and international levels to ensure consistent oversight and shared learning.
- Emphasized the need for training and change management to support regulatory officials and inspectors in adapting to digital tools and AI-driven processes.
- Supported the development of Codex-aligned digital guidance to ensure global coherence as countries adopt AI, remote audits, e-certification, and digital traceability.
- Called for continued exchange between regulators, academia, and industry to co-create realistic, scalable, and equitable digital solutions.



Summary of Day 2 – 11 June 2025

Session 4: Digital Traceability Solutions and the Role of Data Standards to Address Interoperability Challenges

Moderator:

Ms. Mirian Bueno, Technical Director for Food Safety, SENASA, Honduras

Keynote Presentation (video message):

Mr. Wiggs Cilitivo, CEO & Founder, Starfish Network

In a video message, Mr. Cilitivo emphasized that the main obstacle to effective food traceability is not data scarcity but the inability of systems to connect. He stressed the importance of digital standards like GS1 EPCIS to enable seamless data sharing across supply chains and highlighted the role of interoperability in building resilient, responsive food systems.

Panelists:

Ms. Krisztina Vatai, Service Management Director, GS1 Hungary

Mr. Gabriel Hanne, Quality Assurance Lead, METRO Group

Ms. Rola Bou Khozam, Head of Food Safety & Control, MEA

Mr. Gergely Kéves, Leader, International Traceability Projects, TE-FOOD International GmbH



Discussion Highlights:

The session explored how digital traceability solutions and data standards can address pressing interoperability challenges across food supply chains. The panel emphasized that traceability is not only a tool for efficiency and crisis response, but a foundational element for consumer trust, trade facilitation, and public health.

Panelists discussed the value of adopting global data standards such as GS1's EPCIS, and how they enable seamless sharing of traceability data across organizations and borders. The discussion also highlighted persistent implementation challenges, including inconsistent regulatory requirements, high costs for SMEs, and limited digital infrastructure in some regions.

A recurring theme was the role of public-private collaboration in standard adoption. Case examples from

METRO and TE-FOOD showcased how digital traceability systems have improved targeted recalls, reduced food waste, and strengthened supplier accountability. Panelists emphasized that technology alone is not enough governance, education, and process redesign are critical to success.

Conclusion:

- Strong endorsement of adopting international data standards to ensure traceability systems are interoperable and scalable.
- Emphasis on capacity building and tailored support for LMICs to implement digital traceability effectively.
- Agreement that government support and clear regulatory frameworks are needed to drive adoption, especially among small and medium food businesses.
- Supported further exploration of hybrid traceability models combining centralized and decentralized data systems.
- Encouraged initiatives that align national traceability systems with global standards to reduce friction in international trade.

Session 5 – Bridging the Data Gap: Sharing Information for Enhanced Food Safety Outcomes and Trade

Moderator:

Mr. Glen Edmunds, Director, Export Standards, Department of Agriculture, Fisheries and Forestry (DAFF), Australia

Panelists:

Ms. Andrea Maldonado, Expert on Data Analysis and Reporting, BVL, Germany

Mr. William O'Sullivan, Head of Data Science, Creme Global

Mr. Aldin Hilbrands, CEO, FSSC Foundation

Mr. Khalid Al-Zahrani, Vice-Chairperson, Codex Alimentarius Commission



Discussion Highlights:

This session explored how improved data sharing can serve as a catalyst for enhanced food safety and smoother international trade. Mr. Edmunds opened by framing the persistent disconnect between data availability and data usability, especially across borders and regulatory systems.

Panelists emphasized that a wealth of food safety data already exists, but structural barriers such as fragmented data sources, lack of harmonized standards, confidentiality concerns, and insufficient incentives hinder meaningful exchange. Mr. O'Sullivan illustrated how data science tools can integrate risk models and predict hazards, but stressed that effectiveness depends on reliable and interoperable data inputs.

Ms. Maldonado highlighted the challenges faced by regulators in collecting consistent data from decentralized actors, underscoring the need for legal frameworks that balance transparency with data protection. Mr. Hilbrands spoke about industry-led certification schemes and how they generate valuable traceability data, but noted that trust must be built with regulators to make this data mutually usable.

Mr. Al-Zahrani offered insights from Codex's perspective, advocating for increased alignment of data standards internationally to support developing countries in meeting import/export compliance. Panelists agreed that trust both between institutions and with the public is a prerequisite for broader data sharing, and that governments and industry must co-design solutions.

Examples were given of how collaborative platforms, open standards, and capacity building particularly for SMEs and low- and middle-income countries can transform data into a public good for food safety governance and trade facilitation.

Consensus and Points Taken:

- Food safety data is abundant but often siloed; interoperability and legal clarity are key.
- Public-private collaboration and shared standards are essential for unlocking data's value.
- Building trust and digital capacity is especially crucial for developing countries.
- Incentives, legal safeguards, and practical frameworks must accompany technical solutions to bridge the food data gap.



Solution Talk: Technical solutions in the agrifood sector

Moderator:

Mr. Chris Mejía Argueta, Founder & Director, Emerging Market Economies Logistics Lab (EMeL), MIT Center for Transportation and Logistics (CTL)



Presentations:

Four panelists presented digital solutions designed to enhance regulatory transparency, food safety assurance, and operational resilience in agrifood systems. The conversation highlighted the role of AI, automation, and decision-support tools in enabling smarter compliance, especially for smallholder producers and regulators in complex settings.

- **Ms. Sam Walsh**, Partner at Deloitte, presented *RegExplorer*, an AI-enabled tool that translates complex, jurisdiction-specific legislation into standardized, machine-readable formats using the FLINT framework. She emphasized the tool's evolution from traditional natural language processing to generative AI, enabling regulatory conversion at scale reducing manual effort from two days per page to 14 seconds. *RegExplorer* supports SMEs in navigating fragmented regulations and allows governments to build trusted, exportable frameworks for digital compliance.
- **Mr. Bulcsu Gödri**, Chief Operating Officer at OPEX Solutions and affiliated with the University of Szeged, introduced *Farmer's Eye*, a high-precision livestock management system. The solution integrates multisensory data including acoustic, thermal, and behavioral analytics using AI and deep learning to monitor animal welfare and energy efficiency. A chat-based interface provides real-time, actionable insights to farmers without dashboard overload. Gödri stressed the link between welfare, sustainability, and productivity, and noted growing farmer interest in data-informed care.
- **Mr. Daniel Laczó**, representing the University of Szeged's Technology Transfer Office, presented QX, a quality management software tailored for food industry manufacturers. Developed after gaps were identified in existing ERP and audit tools, QX enables real-time monitoring, digitized record-keeping, and compliance with global standards like IFS Food. Operators can input data directly on the production floor via tablets, while managers gain instant access to trends, alerts, and audit-ready reports. QX aims to shift food safety from reactive inspection to proactive, user-friendly quality control.

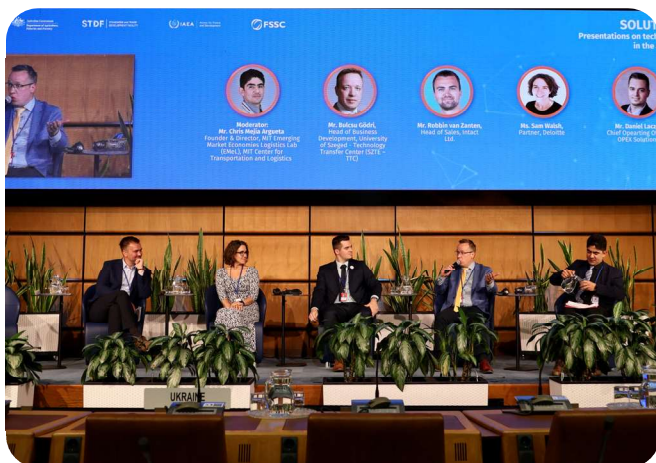
- **Mr. Armin Prugmaier**, Chief Commercial Officer at Intact Systems, showcased Intact's modular software for managing audits and certifications across the food industry. Designed for regulators, certification bodies, and standard setters, the platform helps address growing complexity, data overload, and auditor resource constraints. Prugmaier emphasized AI-enabled risk profiling, smart scheduling, and historic trend analysis to support more efficient auditing. Case examples included GlobalG.A.P. and IFS, with hundreds of thousands of audits annually. He stressed the need to move from PDF-heavy documentation toward structured, reusable data for traceability and benchmarking.

Discussion highlights:

The conversation explored challenges to scaling these technologies, especially in lower-resource settings. Panelists cited data silos, change resistance, and lack of interoperability as key barriers. Sam Walsh underscored the importance of early dialogue between regulators and innovators to co-design solutions and reduce approval delays. Bulcsu Gödri emphasized the risks of vendor-based data lock-in and called for open architectures to enable multi-model integration. Mr. Prugmaier and Mr. Laczo pointed to the value of real-time, user-friendly tools that balance audit precision with operator ease. All agreed that regulatory trust, ethical AI, and governance frameworks are essential for adoption.

Conclusion:

- Broad agreement that AI-powered tools can help standardize, scale, and demystify food safety compliance particularly for SMEs navigating fragmented global regulations.
- Open data frameworks, cloud infrastructure, and modular system design were cited as key enablers of interoperability and cost-effectiveness.
- Animal welfare, energy efficiency, and traceability were highlighted as overlapping outcomes that can be supported through precision analytics and real-time insights.
- Panelists emphasized the need for cross-sector collaboration, inclusive design, and investments in digital skills and trust-building among regulators, producers, and technology providers.



Session 6 – Government to Business: Facilitating Data-Sharing

Moderator:

Ms. Marlynne Hopper, Acting Head, Standards and Trade Development Facility (STDF)



Presentations:

Two speakers presented contrasting yet complementary perspectives on the dynamics of data-sharing between government authorities and businesses in the context of food safety and trade.

- **Mr. Hans Van der A**, Specialist Advisor at the Netherlands Food & Consumer Product Safety Authority (NVWA), shared how the Dutch government has developed robust systems to collect, analyze, and act on business-originated data. He emphasized the importance of co-designing digital platforms with industry stakeholders to ensure usability and trust. Hans highlighted the NVWA's efforts in predictive risk management, where voluntary data submissions from businesses help target inspections more effectively. He stressed that trust, legal clarity, and feedback loops are essential for sustainable data exchange, citing successful Dutch examples of public-private cooperation in food safety assurance.
- **Mr. Darren Swindells**, General Manager at Teys Australia Food Solutions, provided the private sector perspective. He explained how businesses like Teys invest heavily in internal data systems to meet food safety, quality, and sustainability requirements. Darren illustrated how industry-led initiatives such as Australia's National Livestock Identification System (NLIS) demonstrate the feasibility of comprehensive traceability across the supply chain. He also discussed challenges, including duplicative reporting requirements from multiple regulators and concerns about how shared data might be used for enforcement. Darren advocated for risk-based, proportionate approaches and called for greater alignment across jurisdictions to reduce friction and support innovation.

Discussion Highlights:

The discussion underscored the need for mutual trust and shared value in government-to-business data sharing. Participants emphasized that:

- Clear governance frameworks and legal protections are prerequisites for encouraging businesses to share sensitive data.
- Demonstrating value back to businesses such as through reduced inspection frequency or streamlined reporting can incentivize participation.
- Interoperability and harmonization of data formats across sectors and borders are needed to avoid fragmentation.
- Investment in digital infrastructure, data standards, and capacity building (especially in LMICs) will be key to global scalability.

Conclusion:

- Government-to-business data sharing offers powerful opportunities for smarter risk management, improved food safety, and trade facilitation.
- Success depends on enabling policies, co-creation, and transparency.
- Building on existing models like the NVWA's predictive systems or Australia's traceability tools can inform pilots in other regions.
- Participants encouraged further dialogue to align incentives, ensure data protection, and foster public-private partnerships.



Session 7 – Remote Audit and Inspection Practices

Moderator:

Ms. Nancy Rheault Senior Director, Food Import and Export Division, International Affairs Branch, Canadian Food Inspection Agency (CFIA)



Presentations:

This session explored the evolving landscape of remote audits and inspections, especially within the ASEAN region, and how these practices are shaping regulatory frameworks and international cooperation.

- **Ms. Madeleine Smith**, Senior Food Safety Expert, UNIDO, presented the preliminary findings from a 2024 survey on remote audit practices among ASEAN regulators. She highlighted continued, though uneven, use of remote inspections post-COVID, with 56% of surveyed regulators still using them. Benefits cited included flexibility, reduced travel costs, and access to remote areas, while concerns remained about data quality, internet reliability, and the lack of regulatory frameworks. The survey showed that many authorities developed their own SOPs due to the absence of Codex guidance at the time. Ms. Smith emphasized that remote audits are primarily used in hybrid models, often as follow-ups or risk-based assessments, and called for more formal evaluation and capacity building.
- **Mr. Pham Quang Minh**, Assistant Director, Food, Agriculture and Forestry Division, ASEAN Secretariat, discussed how remote audits align with ASEAN's broader food safety and digital policy agendas. He emphasized ASEAN's commitment to harmonizing food safety standards, developing regional guidelines on digital technologies, and strengthening mutual recognition mechanisms. He outlined ongoing initiatives to draft ASEAN-wide protocols on remote audits and e-certification, and the need for digital infrastructure and legal reforms to support this transition.
- **Dr. Nuryani Zainuddin**, Director of Veterinary Public Health, Directorate General of Livestock and Animal Health Services, Ministry of Agriculture, Indonesia, shared Indonesia's experience conducting remote audits during COVID-19 under emergency regulation. These were mostly applied to domestic establishments using government-developed SOPs, as no international standards existed at the time. Dr. Zainuddin emphasized the benefits for reaching remote islands and reducing health risks, but also pointed to challenges in physical verification, inspector skills, and regulatory continuity once the emergency measures ended.

- **Ms. Mary Grace Mandigma**, Director, Bureau of Agriculture and Fisheries Standards, Department of Agriculture, Philippines, presented the Philippines' experience applying remote audits in the context of organic certification. Her agency developed interim manuals and procedures during the pandemic, guided by ISO principles and a feasibility and risk analysis (FRA) approach. While initially hesitant, they found the model adaptable and continue to use hybrid approaches. Ms. Mandigma noted alignment between their practices and the Codex guidance published later, and emphasized the need to integrate remote audits formally into regulatory policy going forward.

Discussion Highlights:

The discussion emphasized that remote audits have proven useful for maintaining regulatory oversight in emergency contexts and for reaching remote or underserved areas. However, trust, data validity, and infrastructure remain key barriers. Participants acknowledged the need for tailored training for inspectors, clearer legal mandates, and regional harmonization of standards. The issue of mutual recognition and cost-sharing in international audits was also discussed. Ms. Rheault highlighted the value of remote audits in building capacity and fostering collaboration, particularly in settings with limited resources.

Conclusion:

- Remote audits are viewed as a complementary tool not a replacement for traditional inspections, particularly in hybrid regulatory systems.
- Codex guidelines, though recent, are helping countries align practices and explore legal and policy reforms.
- ASEAN is actively working to develop regional frameworks and toolkits to support digital verification and mutual recognition.
- Training, infrastructure, and inspector skills were identified as priority areas for international cooperation.
- Stakeholders called for formal evaluations to assess the effectiveness and trustworthiness of remote approaches and support evidence-based policymaking.



Summary of Day 3 – 12 June 2025

Session 8: Electronic SPS Certification – Enhancing Food Trade through Digital Trust

Moderator:

Ms. Edith Laget, Policy Analyst for Agri-Food Trade and Markets, OECD

Panelists:

Ms. Anna Somerville, Assistant Secretary, Department of Agriculture, Fisheries and Forestry, Australia

Ms. Nogaye Diagne Diop, Programme Coordinator, African Alliance for E-Commerce

Ms. Maria Esteras, Senior Technical Advisor, USDA Food Safety and Inspection Service

Mr. Erik Bosker, Senior Policy Advisor, Ministry of Economic Affairs, The Netherlands

Ms. Macarena Torres Rosel, Deputy Director, Global Alliance for Trade Facilitation, World Economic Forum



Discussion Highlights:

The session explored the role of electronic sanitary and phytosanitary (SPS) certification in facilitating safer, faster, and more transparent food trade. A recurring theme was the central importance of trust not only in the technology itself, but in the partnerships between regulatory agencies, private operators, and international organizations. Speakers emphasized that building trust takes time and relies on sustained collaboration, shared understanding, and strong communication between trading partners.

Panelists discussed the technical, legal, and institutional challenges of transitioning to paperless SPS systems. While digital infrastructure is advancing, outdated legislation often remains a major barrier. In many countries, legal requirements still mandate physical signatures or hard-copy documents, preventing full digital implementation. The experience of countries like Australia and the Netherlands illustrated that even with advanced systems, parallel paper and digital workflows may be needed until regulations catch up.

Another key takeaway was that digitization alone is not a silver bullet. As several speakers noted, it is not enough to convert analog processes into digital ones; legacy workflows must be reengineered first. This requires institutions to review and simplify their certification procedures to avoid replicating inefficiencies in new formats. Automation, when thoughtfully implemented, was shown to bring significant gains such as reduced certificate issuance times and fewer trade delays.

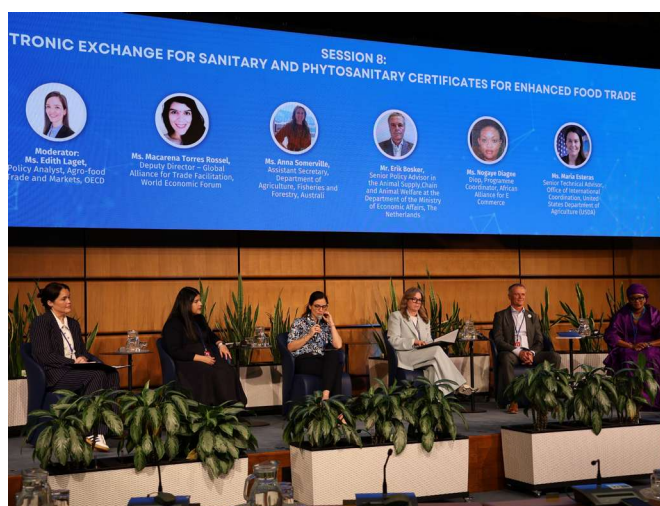
Interoperability emerged as a critical requirement, both across borders and within national systems. International standards such as those developed by Codex, UN/CEFACT, the World Customs Organization (WCO), and the World Organisation for Animal Health (WOAH) were described as essential reference points to align data models and enable secure, trusted exchanges. Experiences from bilateral and regional exchanges highlighted the benefits of shared semantic frameworks and the importance of integrating food safety certificates into single window systems that also include customs and trade functions.

The private sector's role was also a focus. Participants stressed that exporters, importers, and logistics providers must be involved from the outset in designing and testing digital certification platforms. Their operational needs often go beyond compliance, as certification data is also used for commercial purposes. Ensuring usability and reducing administrative burden was seen as essential to encourage adoption, especially among small and medium-sized enterprises (SMEs), which often lack the resources to navigate complex digital transformations.

Finally, several speakers emphasized that successful implementation depends on more than just IT infrastructure. Capacity-building, change management, and political will were all identified as vital enablers. Building human capability to support digital systems both within governments and in the private sector was seen as essential to ensure continuity, sustainability, and long-term impact.

Conclusion:

The panel demonstrated strong alignment around the value of electronic SPS certification in promoting safe and efficient trade. While technical solutions are advancing, legal modernization, cross-agency coordination, and trust-building remain crucial to unlocking their full potential. The discussion underscored the need for continued investment in standards, systems, and people to drive the digital transformation of global food safety.



Session 9: Machine Learning in Food Safety – Enhancing Surveillance and Regulatory Oversight

Moderator:

Ms. Eleonora Dupouy, Food Safety Officer, Food and Agriculture Organization of the United Nations (FAO)

Panelists:

Mr. Akos Józwiak, Professor, University of Veterinary Medicine, Budapest; Chair, EFSA Advisory Group on Data

Mr. Adriano De Pasquale, Head, Bioinformatics Unit, Istituto Superiore di Sanità (ISS), Italy

Ms. Reena Ahmed, IT Innovation Lead, Division of Information Technology, International Atomic Energy Agency (IAEA)

Mr. Bobby Krishna, Senior Specialist, Food Safety Department, Dubai Municipality



Discussion Highlights:

This session explored how machine learning (ML) is transforming food safety, with a focus on improving surveillance and regulatory decision-making. Panelists discussed current applications, institutional pathways, and major constraints to effective deployment.

Mr. Akos Józwiak opened with a reflection on the complexity of food systems and how ML is not merely a data-processing tool but a transformative paradigm. He emphasized that while ML offers new scientific capabilities, it must contend with data gaps, low interoperability, and significant blind spots in our understanding of food composition and contamination. He underscored the urgent need to develop data literacy in food safety professionals, citing a lack of AI and data analytics training even in advanced curricula for risk assessment in Europe.

Mr. Adriano De Pasquale presented Italy's application of ML on whole genome sequencing (WGS) data for foodborne pathogen surveillance. Through the GEPA bioinformatics platform, his team developed models to predict phenotypic traits like antimicrobial resistance and adaptation to food environments.

He emphasized the challenges of verifying ML predictions in genomics, particularly when reference labels are weak or unavailable. In outbreak investigations, for instance, ML can help link clinical and food samples, but reliability depends on robust metadata and labeling. He demonstrated that binary classifications (e.g., meat vs. non-meat) offer better real-world performance and have already been deployed in ISS's expert systems.

Ms. Reena Ahmed shared an IAEA project that applied ML to improve food authentication methods. Collaborating with the Food Safety and Control Laboratory, the team used multispectral imaging and near-infrared spectroscopy to distinguish rice samples from different regions in Myanmar. The results showed higher accuracy using whole grain samples, avoiding extra preparation steps. Beyond the model, Reena highlighted efforts to transfer this technology to Member States through capacity-building workshops. She emphasized the value of open-source and low-code ML platforms, which allow non-programmers to replicate models in low- and middle-income countries (LMICs).

Mr. Bobby Krishna described how Dubai Municipality is institutionalizing ML across its food safety inspection systems. His department leverages AI to support predictive, risk-based inspections by integrating historical data, real-time violations, and environmental health inputs. Tools like OCR and generative AI are used for labeling verification, risk classification, and multilingual communication during inspections. Bobby stressed the importance of incremental development, starting with structured legacy data and building agility into regulatory workflows. He also shared examples of using LLMs (e.g., Google Notebook LM, Gemini Live) for inspector training and internal knowledge transfer.

During the panel discussion on bridging the digital divide, speakers converged on several key points. While the cost of entry to ML has decreased thanks to cloud computing and no-code tools, the main barriers are institutional capacity and data literacy. All panelists stressed the importance of human capital development combining domain-specific expertise with a foundational understanding of AI. Reena and Adriano mentioned FAO and IAEA initiatives aimed at harmonizing efforts across LMICs, including training programs, AI roadmaps, and forthcoming governance guidance. Akos encouraged greater experimentation with generative AI and stressed that even modest applications can deliver value when combined with local knowledge. Bobby concluded by highlighting the importance of human-centered design and the need to carefully integrate AI into regulatory institutions in a way that complements and strengthens decision-making, not replaces it.

Conclusion:

The session showcased diverse, real-world applications of machine learning in food safety, from WGS analysis to predictive inspection systems. Panelists agreed that ML offers tremendous potential for strengthening surveillance and regulatory effectiveness, but underscored the need for foundational investments in data quality, institutional literacy, and ethical frameworks. The discussion reinforced that while the tools are increasingly accessible, sustained collaboration, education, and incremental implementation are critical to success—especially in LMICs.



Closing Ceremony:

Ms. Anna Somerville opened the closing session by extending gratitude on behalf of Australia, an important partner of the Forum. She commended the Forum's success in fostering dialogue between regulators, industry leaders, and academics around the digitalization of food safety systems.

She highlighted the shared challenges and opportunities in data management and information exchange across jurisdictions. A key takeaway from the three-day discussions was the need to improve interoperability of digital systems and foster cooperative approaches to maximize the utility of data in food safety and trade. She also expressed appreciation for the moderators, translators, and organizing partners, especially UNIDO and DAFF colleagues, for making the event seamless.

Ms. Somerville concluded by urging participants to carry forward lessons learned and integrate them into their practices. She also previewed that many themes discussed at the Forum would contribute to the next CCFS meeting to be hosted in Perth, Australia in 2026.

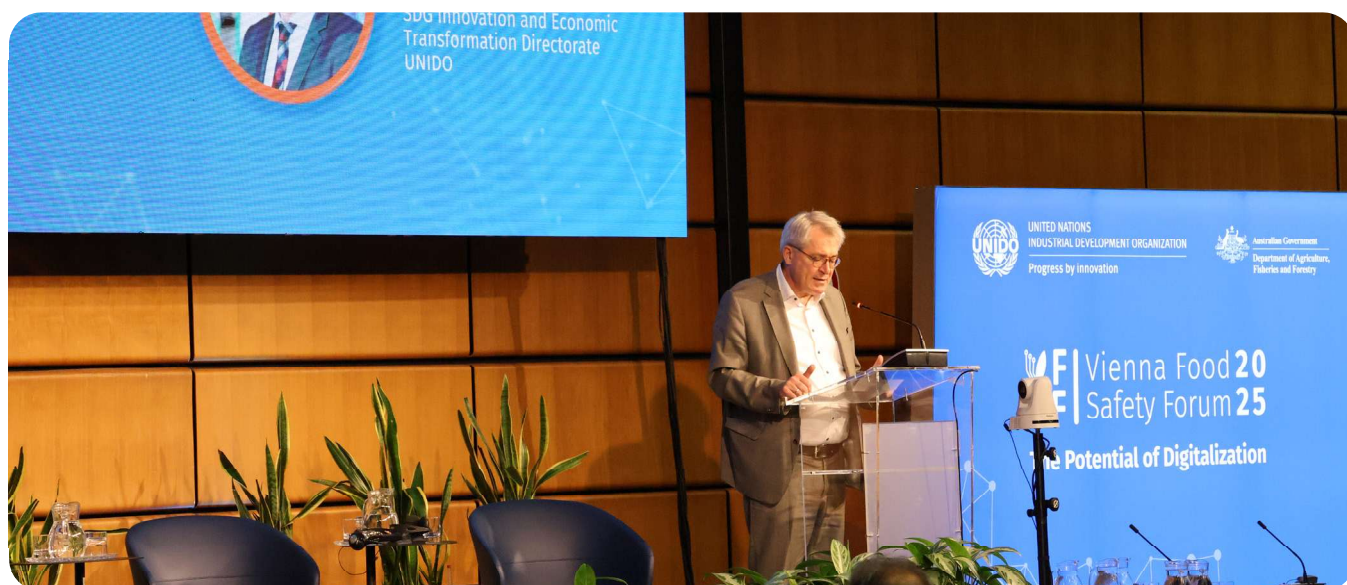
Mr. Gunter Beger delivered the final remarks, acknowledging the energy and commitment of participants who stayed engaged until the very end of the Forum. He celebrated the event as a turning point where digitalization and artificial intelligence emerged not just as buzzwords, but as real enablers for better food governance, enhanced trade, and greater public trust.

Beger emphasized the importance of co-creating solutions and shared pathways, noting that the Forum showcased how jurisdictions are piloting AI-enabled risk assessments and digital traceability, while regulators begin integrating next-generation platforms into inspection and data systems. He underscored that these efforts are no longer theoretical they represent a working blueprint for others to follow.

UNIDO reaffirmed its commitment to support member states, particularly developing countries and least developed countries (LDCs), in digitally transforming their food safety systems. This includes investments not only in infrastructure but also in institutions and human capital.

The event closed with a powerful reminder: food safety is a fundamental right, and meeting 21st-century challenges requires 21st-century tools. The Forum concluded with a symbolic invitation to action: to leave Vienna with a renewed commitment to act, invest, and collaborate.

The ceremony ended with expressions of heartfelt thanks to all who made the event possible especially the moderators, interpreters, and organizing teams. Representatives from Australia, UNIDO, WTO, and others joined on stage for a final round of applause, capturing the spirit of unity and shared vision that defined the Vienna Food Safety Forum 2025.



OUTCOME OF THE EVENT:

The Vienna Food Safety Forum 2025 concluded with a strong consensus that digitalization and artificial intelligence are essential tools to modernize food safety systems, enhance risk-based regulatory approaches, and facilitate safe and fair trade. Participants recognized that global interoperability of digital platforms, secure and equitable data sharing, and the adoption of international standards are critical enablers for success. Capacity building in low- and middle-income countries was identified as a priority to ensure that digital solutions are inclusive and do not widen the existing digital divide. The forum emphasized that institutional reform, workforce development, and public-private partnerships must complement technology deployment. These shared priorities will inform Codex discussions, international investment, and collaborative initiatives aimed at building resilient, data-driven food safety systems that protect public health and support global market access.





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