Traceability Trends and Global Policy

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The ability to follow the movement of a food through specified stage(s) of production, processing and distribution (Codex Alimentarius Commission Procedural Manual (CAC, 2008)).
In Practical Terms

- Traceability is about knowing where a food item is or has been at a particular moment and what has been done to it.

- Traceability systems are driven by information and must answer questions such as:
  - What is the source of the food ingredients in a product?
  - How was the product preserved?
  - What has been done to the product?
  - Where is the product now?
  - How much of it?
Drivers of Traceability

- Increased incidents of food contamination
  - Liability and litigation
- False labeling of place of origin or ingredients
- Increased public distrust of food safety
- Globalization of the market
- Increasing complexity of supply chains
- The need for the private and public sectors to regain consumer and importer confidence and reduce the risk of future problems.
A Key Driver of Traceability for Developing Countries

Ensuring access to markets in the developed world by:

- meeting World Trade Organization export requirements;
- meeting the requirements of the stricter private sector buyers—requirements that can function as trade barriers to products from developing countries.
Importance of Traceability

- Traceability systems gain the confidence of buyers and well as consumers who are increasingly concerned about food safety.

- Traceability systems can allow for direct communication with the public in producing and buying countries.

- An efficient traceability system lowers the risk posed by potential accidents or market threats and is therefore an important investment for industries aiming to compete in the global market.
Importance of Traceability

- Traceability systems improve transparency throughout the supply chain and ultimately lower the transaction costs associated with recording, transferring, sharing, and querying information.

- Traceability systems can improve business efficiency throughout the supply chain by quickly and accurately recording, sharing, and reporting information.
Why do Companies Invest in Traceability?

They Have to:
- Regulatory Requirement
- Customer Requirement

They Want to:
- Risk Mitigation
- Market Access
- Supply Chain Efficiency
A Multinational Loaf of Bread

INGREDIENTS:

- Wheat gluten
  - France, Poland, Russia, Netherlands, Australia
- Honey
  - China, Vietnam, Brazil, Uruguay, India, Canada, Mexico, Argentina
- Calcium propionate
  - Netherlands
- Guar gum
  - India
- Flour enrichments
  - China
- Beta-carotene
  - Switzerland
- Vitamin D3
  - China

Traceability in a Globalised Economy

- Traceability is of utmost importance as a risk-management tool which allows food business operators or authorities to withdraw or recall products which have been identified as unsafe.

- It is a fundamental principle of food marketing and of food safety policy.
International Standards for Traceability
International Standards For Traceability

- Set by Intergovernmental bodies
  - Codex
  - World Organization for Animal Health (OIE)

- Commercial Standards
  - ISO
  - GS1
  - GlobalGap
  - SQF Programme Code and Guidance
Provides information to assist competent authorities in using traceability/product tracing to contribute to consumer protection against foodborne hazards and deceptive marketing practices and to facilitate trade on the basis of accurate product descriptions.
Codex Guideline CAC/GL 60-2006
Principles for traceability / product tracing as a tool within a food inspection and certification system

- Describes traceability as one of a number of tools that may be used within a food inspection/certification system.
- Importers should consider that food safety equivalence (same level of protection) may be provided without a traceability system.
- Should not be mandatory for exporting country to replicate the importing country’s traceability tool.
- Traceability tool does not in itself improve food safety outcomes – must be combined with other measures.
- Can protect consumers against deceptive marketing practices/fraud.
World Organization for Animal Health (OIE)

- Assists its member countries to implement animal identification and traceability systems to improve the effectiveness of their policies and activities relating to disease prevention and control, animal production, food safety, and certification of exports.

- Established product tracing guidelines/standards in May 2007

- OIE Terrestrial Animal Health Code has a chapter, adopted in 2008 that addresses the development and implementation of identification systems to achieve animal traceability.
OIE Definition of Traceability

- The ability to follow an animal or group of animals during all stages of life.
ISO 22005:2007 gives the principles and specifies basic requirements for the design and implementation of a food and feed traceability system.

Uses Codex definition of traceability.

It does not specify how product tracing should be achieved but requires that the organization should define the information to be obtained from suppliers, to be collected concerning the product and processing history, and to be provided to its customers and/or suppliers.
Requirements of ISO 22005: 2007

- Requires food/feed business to:
  - Set food safety, quality and other objectives
  - Design a system that meets regulatory and customer requirements
  - Specify the information to be obtained from its suppliers, collected within itself and provided to customers
  - Establish procedures, documentation, etc.
  - Implement the system
  - Monitor the system
  - Review and regularly update the system
GS1

- GS1 is a neutral not-for-profit organization dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility of supply chains.

- GS1 is global, with local Member Organizations in 108 countries.

- Global Office is in Brussels, Belgium

- GS1 has produced the GS1 Global Traceability Standard (GS1 US, 2009a.), which links it to enabling technologies and relevant GS1 System tools.
The GS1 Global Traceability Standard

- Addresses the entire supply chain and can be applied to any product;
- Is based on practices used in over 150 countries by a large majority of supply chain partners;
- Describes the creation of accurate records of transactions;
- Meets the core legislative and business need to cost-effectively trace back (one step down) and track forward (one step up) at any point along the length of the supply chain, no matter how many trading partners, business process steps, national and international borders are involved;
- Is compatible with ISO standard 22005 for product tracing.
The GS1 Global Traceability Programme provides guidance to users on meeting the traceability requirements required by the highest standards of quality and food safety such as ISO 9001, ISO 22005, HACCP, BRC, IFS and GLOBALGAP.

While food safety and quality standards define “what” should be done in terms of traceability (i.e. the objectives). The GS1 Programme helps companies to actually do it: it is about the “how” to do it.
Examples of GS1 Traceability Activities Around the World
Asia

- **Thailand**: Working with the Department of Livestock Development to encourage use of GLN for traceability; assisting the private sector with software development.

- **Vietnam**: Working with Shrimp Traceability Pilot Project sponsored by the government to encourage use of GS1 keys and standards.
North America

- Canada: Working with Can-Trace on a collaborative and open initiative to develop traceability standards for all food products grown, manufactured, and sold in Canada.

- United States: Established a collaborative effort with FMI and GMA on a standards-based food recall system to solve a critical problem of structured messaging and workflow aligned with global supply chain standards.
Europe

- **France**: Conducted a study which showed that beyond ensuring consumer safety and respecting laws, food supply chain traceability programs lead to measurable business benefits and return on investment.

- **Switzerland**: Using traceability to fight counterfeit pharmaceuticals.
Latin American Region

- **Brazil**: Developed traceability guidelines for fresh produce and meat.
- **Costa Rica**: Developed with the government the Traceability Conformance Program for the agro food sector to assist exporters in implementing traceability and comply with the EU and U.S. requirements.
- **Guatemala**: Have incorporated traceability projects at the master’s level in universities.
- **Mexico**: Involved in pilot tests on traceability based on Projects of the Free Trade between the European Community and Mexico for products including shrimp, pigs, birds, and avocados.
- **Peru**: Developed and implemented projects in sectors including bananas, organic coffee, herbs, wine, olives, asparagus, and fishing.
Near East

Egypt: Cooperated with the Egyptian National Center for agro food traceability (E Trace), to assist farmers and exporters to implement traceability and comply with the requirements of EU regulation No. EC178/2002.
Global Gap

- GlobalGAP (formerly EurepGAP) is a private sector body that sets voluntary standards for certification of agricultural products around the globe, including aquaculture.

- The organization is a partnership of producers and retailers that want to establish certification standards and procedures for good agricultural practices.

- Global GAP certification is conducted by more than 100 organizations in more than 80 countries.

- GlobalGAP standards include traceability-related control points
  - e.g., the Crops Base module requires that GlobalGAP registered product is traceable back to and traceable from the registered farm where it has been grown
The SQF Program is a leading food safety and quality certification system.

The program was designed to meet the needs of suppliers and buyers, to ensure their compliance with food safety regulations in both domestic and global markets at all stages of the supply chain.

SQF was launched in 1994 in Australia and has 1,500 member companies in the United States and around the world.
SQF Programme Code and Guidance

- The **SQF 2000 code**, a global food safety and quality certification program and management system, within the Safe Quality Food (SQF) Program.

- It is a HACCP-based supplier assurance code for the food manufacturing and distributing industries.

- Addresses among other things, product identification, trace, withdrawal, and recall (SQF Institute, 2009).
The Product Identification provision requires that the methods and responsibility for identifying product during all stages of production and storage be documented and implemented.

The product identification system is implemented to ensure that
- (a) product is clearly identifiable during all stages of receipt, production, storage and dispatch and (b) finished product is labeled to the customer specifications and/or regulatory requirements and product identification records be maintained.
The Product Trace provision requires that:

- finished product be traceable to the customer (one up);
- product tracing be provided through the process to raw materials, food contact packaging and materials and other inputs (one back);
- product tracing is maintained where product is reworked;
- the effectiveness of the product trace system be tested at least annually; and records of product dispatch and destination be maintained.
Private Sector Traceability Initiatives

- Voluntary labelling and/or certification to identify a credibility attribute
  - Local, regional, designated origin
  - Low air miles, sustainability
  - Organic, animal welfare, fair trade

- Individual supply chain initiatives
  - e.g. Tracesafe (UK); van Drie (Neths)
Public Sector Regulatory Initiatives: Drivers of Traceability
EU’s General Food Law entered into force in 2002 and makes traceability compulsory for all food and feed businesses and all food & feed business operators and importers.

Requires that traceability is limited to ensuring that businesses are at least able to identify the immediate supplier of the product in question and the immediate subsequent recipient.

Protection of consumers – food safety

Targeted withdrawal of foods

Consumers provided with targeted and accurate information on implicated products
sector-specific legislation applies to certain categories of food products

- fruit and vegetables,
- beef, fish,
- honey, olive oil

so that consumers can identify their origin and authenticity.
Traceability Rules for GMOs

- Ensures that the GM content of a product can be traced.
- Requires accurate labelling so that consumers can make an informed choice.
Animal Traceability

- For animals, producers require “tagging” every animal with details of:
  - their origin
  - when animals are taken for slaughter,
  - stamp them with the traceability code of the abattoir. The tools used (ear tags, passports, bar codes) may vary from one country to another but must carry the same information.

- For seafood, need to know the origin / source
Examples of traceability Tools and Labels Used in The EU
Sheep and Goat Tag, Lithuania

- Initials of the Animal Recording Centre (Agriculture Information and Rural Business Development Center)
- Country code
- 6-digit individual animal identification number
Cattle Passport, Germany

- Date of issue
- Ear tag number
- Origin
- Name and address of owner
Label on Beef Steak, Belgium

- Traceability bar code
- Country where animal was born
- Country where animal was fattened
- Country where animal was slaughtered
Label on Oranges, Belgium

Origin

Category

Weight

Traceability code
U.S. Regulations Related to Traceability

- The U.S. Bioterrorism Act, 2002
  - Record keeping for the immediate source and recipient of product.

- Reportable Food Registry, 2009
  - “responsible parties” (i.e. facilities that are registered with FDA as part of the Bioterrorism Act of 2002), are required to submit an electronic report if they have reason to believe that an FDA-regulated food “may cause serious adverse consequences or death of humans or animals.

- Country-of-origin labeling program (COOL) 2008
  - Under the mandatory COOL regulation, retailers are required to notify customers of the country of origin
U.S. Regulations Related to Traceability

- **U.S. Food Safety Modernization Act (2011):** Measures to improve traceability within the U.S. food supply are among the key provisions of the Act (FSMA), signed by President Barack Obama into law on Jan. 4, 2011.

- The law requires the FDA to develop a system to quickly track and trace foods as they move through the supply chain.
U.S. Food Safety Modernization Act (2011):

- Requires the development of stringent record keeping requirements for various entities throughout the supply chain and mandates additional recordkeeping for high-risk foods.
Japanese laws related to the legal enforcement of food traceability

- As of 1996, there has been a requirement to labeling the place of origin of fresh produce and certain processed foods, based on the JAS Law

- 2003: Requirement to make efforts towards the provision of information and records in accordance with Paragraphs 2 and 3 of Article 3, the Food Sanitation Law

- 2008: Requirement to make efforts towards the preparation and retention of records to form the basis of labels
Japanese laws related to the legal enforcement of food traceability

Laws for individual items

- **2002**: Beef Traceability Law
  The requirement to attach individual identification marks and records for domestic cattle and beef

- **2009**: Rice Traceability Law
  The requirement to create and preserve records for rice and selected rice products and to provide information on their place of origin
Food Safety Performance World Ranking 2010

- Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Sweden and the U.K. (all E.U.-member countries) earned Traceability and Management grades of superior
  - each of these countries has a comprehensive system of traceability from farm to fork

- Australia, Japan and Norway each scored grades of average for their established but non-universal farm-to-fork traceability systems for some food products.

- Canada and the U.S. do not have well-established farm-to-fork traceability systems for any food product – although both are working on creating one. Therefore, they earned grades of poor.
Conclusions

- Global trade in food commodities will continue to increase
- Traceability can help improve food safety, benefit consumers and the food industry
- Traceability is an issue at both the domestic and global level
- Existing traceability systems differ in scope, depth and precision.
THANK YOU

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