Seafood Traceability & Transparency

NIAA Conference
April 10, 2018
Mission
- Become a market-oriented, science-driven advisor on issues of strategic importance to stakeholders in the food system, with a focus on traceability, transparency, and social license

Our Commitment
- Deliver reliable professional, food science advice to businesses and other food stakeholders so they have knowledge and tools to strengthen their performance within the food system
Today’s Dialogue

- Consider aquatic livestock’s future . . . .
  1. Traceability from a systems perspective
  2. Lessons learned in seafood traceability
  3. Review next steps
Key Points

- Whole-chain traceability is a proven tool
  - Other industries and food sectors do it
  - Can be implemented across seafood industry

- Seafood traceability provides public good and commercial benefits
  - Must commit to a collaborative vision and implementation

- Key to addressing food fraud and illegal, unreported, unregulated (IUU) fishing

- A tool for increasing transparency – Trust
What is Traceability?

- Traceability *is not* about data, identifiers, bar codes, RFID, tags and logs.
  - These are all important, but not sufficient

- Traceability *is* systematic ability to access any or all information relating to a food under consideration
  - Throughout entire life cycle
  - By means of recorded identifications.

- For this to happen, a traceability system must keep track of when the units (and identifiers) are created, used, joined together, split up, and finally disposed/sold
Characteristics:
- Provides access to all properties of a food product, not just those verifiable by analysis
- Provides access to properties of a food product or ingredient in all forms, in all links of the chain
- Systematic recording and exchange of these properties
- Unit identification or numbering system is present and links to key properties
- Facilitates traceability of food product backwards (where it came from) and forwards (where it went)
Seafood Supply Chain

Hatchery → Farms: Pond, Lake, Open Water → Open Market

Wild Caught (Vessel) → Primary Processor

Other Vessel (Mothership) → Primary Processor

Retail Food Service Distributor or Wholesaler → Point of Sale Service
Global Seafood Industry

- Wild caught has been at or close to its maximum. Global catch only up from 86 MT in 2000 to 93 MT (FAO 2014)
  - Proportion of fish stocks designated as fully exploited or overexploited has risen dramatically
  - 43% in 1989 . . . 57% in 2009 . . . 87% in 2015

- Aquaculture is approaching 50% of total production of seafood at just over 74 MT (FAO 2014)
  - Significant technological advances
Focus on Seafood Traceability

- Not a new phenomenon – Start of century
  - Increasing global trade
  - Fisheries management
  - Food fraud and mislabelling
  - Incidence of foodborne illness
  - Technology enhancements

- What are the key drivers of change?
  - Business concerns about operating costs & liability
  - Consumer-driven demands for transparency → Trust
  - Government concerns over illegal, unreported fishing
Enhancing Seafood Traceability

- Global scope – 9 seafood value chains from catch to plate
  - 48 North American, European, Oceania, SE Asian companies
  - Fresh, frozen and tinned seafood: Salmon, Sardines, Shrimp, Tuna, Mahi-Mahi.

- Projects to focus on
  1) Impact of traceability
     - Business performance (financial) and industry vitality
     - Consumer perceptions & willingness to buy
     - Food waste
  2) Decision support tool – ‘ROI calculator’
     - Creates investment business case (net present value)
     - User friendly (smaller businesses), web-accessible. Quick and robust
     - Identifies the costs and benefits of traceability
Seafood Traceability Observations

- Commercial improvement efforts focus on managing growth and supply chain complexity

- Lack of uniform traceability requirements – regulations or standards
  - Raises costs, lowers efficiencies, threatens fish stocks

- Electronic data gathering, storage and retrieval is inconsistent

- Lack of data verification creates gaps that can be exploited
What Information?

- 3 main categories:
  - Master Data
  - Event Data
  - Transaction Data

- Master Data do not change often
  - What is product?
  - Where was it (grown, raised, processed, sold, etc.)?
  - When was it transformed or moved?
What Information?

- Event Data typically associated with key processes
  - Creation
  - Harvest
  - Transportation
  - Blend
  - Sale or disposal

- Event Data changes depend on physical flow of product through ‘system’
What Information?

- Transaction data change routinely
  - Purchase orders
  - Lot/batch numbers
  - Quantities
  - Prices, etc.

- Transaction data are highly variable and firm-dependent

- Some are needed for compliance, while other data are leveraged for business value
What data are key?

- Within the 3 major categories of data:
  
  - Key Data Elements
    - KDEs are specific qualities that are attributed to a product
  
  - Critical Traceability Events
    - Events during which KDEs need to be recorded
    - CTEs link physical processes to attribute data
    - Creation, transportation, transformation, and sale or disposal of a product
Critical Tracking Events (CTE)

Examples:

- Receiving (at the dock/bay)
- Moving inventory in/out of storage
- Weighing/Assembly/Mixing/Making
- Order picking/staging/loading
- Shipping/transportation
- Consumption and Disposal
## Key Data Elements (KDE)

<table>
<thead>
<tr>
<th>Key data element</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot number</td>
<td>Product lot number, batch number, day of production, packaging/expiry date</td>
</tr>
<tr>
<td>Product identifier</td>
<td>Facility specific code for product, GS1 Global Trade Item Number (GTIN), SKU, PLU code, PCP#</td>
</tr>
<tr>
<td>Product description</td>
<td>Name (as applicable), variety, blend</td>
</tr>
<tr>
<td>Date</td>
<td>Date of critical tracking event</td>
</tr>
<tr>
<td>Receiver identifier/Ship to location</td>
<td>Name, premises ID, address, GLN, warehouse ID</td>
</tr>
<tr>
<td>Shipper identifier/Ship from location</td>
<td>Supplier name, premises ID, address, GLN, warehouse ID</td>
</tr>
<tr>
<td>Shipment identifier</td>
<td>Invoice number, purchase order number, or bill of lading number</td>
</tr>
<tr>
<td>Quantity/unit of measure</td>
<td>Weight, volume, cases, pallets, bags or trays</td>
</tr>
</tbody>
</table>
# Seafood Traceability

Example of Key Data Elements & Critical Tracking Events

<table>
<thead>
<tr>
<th>Transactional Data</th>
<th>Suppliers</th>
<th>Fishers/Farms</th>
<th>Processors</th>
<th>Distributors</th>
<th>Retailers/FS</th>
</tr>
</thead>
</table>

### Critical Tracking Events
- Initial order receipt
- Confirmation
- Fish preparation
- Product pickup
- Product shipment
- Disposal – Waste
- Product receipt
- Production start
- Production complete
- Packaging & labeling
- Disposal – Waste
- Order receipt
- Product pickup
- Product delivery
- Loss – Waste
- Product receipt
- Package opened
- Repackage & label
- Sale
- Disposal – Waste

### Key Data Elements
- Catch location/Site #
- Catch Lot # - BOL #
- Catch Order #
- Fisher Product Code
- Customer PO#
- Weight
- No. of containers
- PO # - BOL #
- Production #
- Plant-Site #
- Product Code
- Weight
- Finished Lot #
- No. of containers
- Shipper ID
- BOL #
- Source Plant #
- Finished Lot #
- Product Code
- Product Descript.
- Weight & Units
- Destination ID #
- Product Descript.
- Retailer POS Code
- Bar Code
- Weight
- Selling price

Source: 2011-12 Seafood Value Chain Roundtable – Canadian working group assessment
Summary

- Traceability provides commercial transparency in the supply chain
  - Problems can be identified and addressed more effectively

- Traceability helps eliminate the causes and incentives that drive ‘bad’ behavior
  - Reinforces ‘good’ behavior

- Active stakeholder engagement and cooperation are best practices to address tough issues
  - Improve business performance
Next Steps

- Get engaged! Traceability has already proven it works
  - e.g. Automotive, Electronics, Pharmaceuticals, other foods, and in other countries

- Collaborate with partners for solutions
  - Engage non-profit, government, consumers
  - Focus on dialogue and action to move industry forward

- Change thinking! Traceability is an innovation tool
  - Leverage experience, project findings, and partnerships
Thank You

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