

Revolutionizing ROI

Defining Comprehensive Return on Investment for Seafood Traceability

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Executive Summary

As a non-profit organization that partners with end-buyers and mid-supply chain companies to transform seafood supply chains, FishWise knows traceability data – particularly harvest data – has value beyond financial returns. The "[Revolutionizing ROI of Seafood Traceability](#)." project was undertaken to explore various kinds of benefits seafood companies can receive by better integrating data from electronic catch documentation and traceability (eCDT) technologies.

With the generous support of the Walton Family Foundation, FishWise set out to understand how investments in electronic monitoring and reporting (EM/ER) systems could benefit seafood companies throughout the supply chain. To gain an understanding of current traceability practices, we conducted research and interviewed experts about EM/ER use in the U.S. West Coast groundfish fishery and Gulf of Mexico shrimp fishery.

The project investigated:

- **Motivations and levels of investment in eCDT and supply chain data sharing in U.S. fisheries**
- **The comprehensive benefits, beyond traditional financial ROI, of investing in eCDT technologies**
- **End-buyer willingness to pay for access to harvest data, especially data collected with EM/ER systems**
- **Willingness to adopt a more comprehensive definition of traceability ROI**
- **How companies could measure the benefits they are getting with the Benefits Evaluator for Seafood Traceability (BEST) framework**

This groundwork laid the foundation for the Comprehensive Traceability Return on Investment (CT-ROI) concept, which redefines return on investment (ROI) in the context of traceability programs by focusing not only on the monetary bottom line. Instead, we looked at how sharing data from these technologies can make a positive impact on people, the environment, and the seafood industries in which companies operate. Building a triple impact model, or “comprehensive” approach, into designing and implementing a company’s traceability program can help it achieve goals related to its sustainability and social responsibility commitments in addition to realizing the financial and operational benefits attributed to electronic traceability investments.

FishWise believes that CT-ROI has significant potential. Our research has shown interest and data to support CT-ROI, with use cases expanding as EM/ER adoption grows. This proof of concept for measuring diverse benefits beyond financial returns will become more measurable with greater uptake. FishWise remains dedicated to applying CT-ROI and the BEST tool within our industry partners' initiatives, driving sustainability and transparency in the seafood sector.

The Need for a New ROI Definition

In this report, FishWise introduces a simple yet profound shift in the definition of ROI for seafood traceability. Our efforts began with a fundamental recognition that typical accounting of ROI for traceability investments is primarily focused on the financial value or profitability these systems deliver a given company in terms of the time saved in gathering, compiling, and delivering information. However, this ignores the wider spectrum of social, economic, and environmental benefits and their importance within supply chains.

The need to redefine Comprehensive Traceability ROI (CT-ROI) becomes evident when we explore the diverse ways seafood data can be applied within and between seafood companies.

There is a growing awareness that traceability is a cornerstone of transparency, and both are foundational to a sustainable seafood industry. Transparent supply chains empower companies to manage risk, ensure sustainability, and optimize profitability. They foster accountability, compliance, and responsible practices by enabling stakeholders in the private sector, government, and civil society to verify sustainability claims and address environmental and social impacts.

Traceability is an essential tool for bolstering the authenticity, quality, and safety of seafood by tracking its journey from harvest to consumer. However, investing in seafood traceability is not solely a matter of regulatory necessity; it is also driven by the evolving preferences of end-buyer companies and consumers that are committed to making informed choices regarding their seafood purchases. A [study](#) conducted by the Food Industry Association (FMI) found that a majority of seafood shoppers are not only aware of sustainability programs implemented by grocery stores, but two-thirds of seafood shoppers consider sustainability a pivotal factor when making purchasing decisions. Thus, an emphasis on transparency and traceability provides an opportunity to bolster brand reputation and cultivate customer loyalty.

With an expanded definition of ROI, companies can look more closely at the monetary and non-monetary returns they are currently receiving and have a baseline to compare against as they weigh efforts to tap these emerging data sources.



Defining Comprehensive Traceability ROI

Comprehensive Traceability Return on Investment (CT-ROI) is a metric used to understand the social, environmental, and economic value created by investing in electronic traceability platforms and programs.

CT-ROI allows companies to estimate and evaluate the long-term individual benefits of investing in electronic traceability systems as well as any broader social and ecological outcomes that can be realized. Improved data quality and access to supply chain data can result in positive environmental, economic, and social outcomes for both individual companies and stakeholders upstream along the value chain (i.e., suppliers, processors, and producers).

Explanation of CT-ROI Benefit Types

1. **Social Benefits** – reveal trends where labor and human rights risks may be occurring, helping to focus limited capacity on data verification and supplier engagement, ultimately mitigating reputational risk. *Note: a traceability system can never prove harm or social responsibility; it can only provide data to help identify potential risks.*
2. **Ecological Benefits** – use of traceability systems to verify products consistently meet environmental policy requirements, which can contribute to better resource management, including mitigating illegal fishing practices and securing a long-term seafood product supply.
3. **Economic Benefits** – can bring significant cost savings through increased operational efficiencies, reducing the risk of regulatory non-compliance fines resulting in a more informed procurement process.

Measuring CT-ROI with the BEST tool

The value of an investment in traceability goes beyond financial returns, so it is important to recognize and be able to measure the broader social, environmental, and economic impacts that can result from traceability-informed decision making. That's where the [Benefits Evaluator for Seafood Traceability \(BEST\) tool](#) comes in.

BEST was initially created in 2020 when the [Seafood Alliance for Legality and Traceability \(SALT\)](#) joined forces with Future of Fish and the Helen Packer Foundation to develop a framework to measure the comprehensive benefits governments could achieve with electronic catch documentation and traceability (eCDT) programs. However, the BEST tool also allows users from the seafood industry, NGOs, and traceability technology sectors to consider a broader range of positive outcomes that can be supported by traceability data.

What makes the BEST tool unique?

- **Interactive Spreadsheet:** It's an easy-to-use, interactive spreadsheet that can be tailored to fit a company's or government's specific needs.
- **Customizable Filters:** Users can personalize the tool by using filters to sort benefits by type (economic, social, or ecological), desired outcomes (like cost savings or risk mitigation), input data, or key data elements (KDEs) needed for evaluation.
- **Pre-set Metrics and Evaluation Criteria:** The online version of BEST comes with predefined metrics and evaluation criteria. These help guide users in assessing how effective their traceability program is at delivering benefits. It also offers suggestions for making ongoing improvements.

In essence, the BEST tool empowers companies to map out the monetary and non-monetary benefits they want to achieve through their traceability system and then measure how well they are actually realizing those benefits. This approach helps companies appreciate the full impact of their investment and tailor their traceability efforts for maximum returns.

Year 1

Year 2

Year 3

Year 4

Year 5

5

The BEST tool can be tailored to accommodate industry-specific metrics and evaluation criteria. Here are two illustrative examples:

Economic Focus

Suppose a company aims to generate cost savings through streamlined data collection and verification practices. Their investment in an electronic, interoperable traceability platform has facilitated seamless integration of product source data. To gauge the economic return, they might measure the percentage of KDEs automatically uploaded per vendor survey and determine whether this results in reduced staff or consultant hours dedicated to data entry over a specified timeframe.

Ecological Emphasis

Alternatively, a company may adhere to a strict policy related to bycatch avoidance in tuna sourcing. In this scenario, they aim to source from vessels or fleets known to have cameras or electronic monitoring capabilities onboard. To measure progress towards their desired ecological benefit, they could calculate the percentage of products or sources originating from EM-monitored fisheries, bolstering confidence in their procurement practices' environmental sustainability.

Benefit Type	Benefit Outcome	Hardware or Software (i.e., Traceability Tool)	Input Data (KDEs)	Metric	Evaluation Criteria (CT-ROI)
Economic	Meets regulatory compliance	Electronic and interoperable traceability platform	Product source data & product handling data	Reduced incidents of audits	% compliance with regulatory requirements = Reduced fines or staff time spent on audits
Economic	Cost savings – streamlining data verification practices	Electronic and interoperable traceability platform	Product source data	% KDEs automatically uploaded per vendor survey	Decreased # of staff or consultant hours spent on data entry per year
Ecological	Mitigation of IUU practices in supply chains	Electronic and interoperable traceability platform	Product source data; sourcing from vessels with EM/ER	% of products with full chain traceability; % of products from EM/ER monitored fisheries	Increased level of vessel data = greater assurance of legal supply chain practices
Ecological	Bycatch avoidance	Vessel Cameras	Sourcing from vessels with EM/ER	% of products from EM/ER monitored fisheries & bycatch reports	Increased % = Ability to verify bycatch avoidance
Social	Compliance against human and labor rights policy	VMS (or other vessel monitoring system)	# days at sea	% of products with VMS and logged days at sea	Decreased # of vessels that trigger red flags = greater SR assurances
Social	Mitigate reputational risk of human and labor rights abuses	e-Documents; Satellite data	Crew manifesto, vessel activity log, etc.	% of products with available vessel data	Decreased # of vessels that trigger red flags = greater SR assurances

Participant Perspectives

At the core of any effective traceability system lies harvest data. This harvest data provides critical information about the origin, time, and method of seafood capture, facilitating transparency and informed decision-making. It allows supply chain stakeholders to assess the sustainability of seafood, evaluate the health of fish stocks, monitor fishing practices, and implement effective fisheries management strategies. Traceability tools like EM/ER are generating a lot of new and potentially valuable information that could provide broader benefits to companies than is typically available within supply chains but will require additional investment to tap. However, the current lack of examples of supply chains sharing EM/ER data and reporting on the resulting ROI benefits is likely a barrier to its broader adoption.

7.5 FishWise set out to understand specifically how investments in EM/ER systems could benefit seafood companies throughout the supply chain beyond compliance purposes. To integrate real-world feedback, we conducted research and interviewed experts about EM/ER use in the U.S. West Coast groundfish fishery and compared that to traceability practices in Gulf of Mexico shrimp supply chains.

The 'Revolutionizing ROI in Seafood' project investigated motivations and investment in eCDT technologies, existing and future users, willingness to adopt and measure CT-ROI, and how companies can actually measure CT-ROI.

Insights from Project Participants

At the heart of FishWise's research was engagement with seafood industry stakeholders, spanning government representatives, NGOs, technology companies, seafood buyers, and supply chain companies.

During these stakeholder interviews, our primary objective was to explore the potential of leveraging existing eCDT data to underpin sustainability commitments at the end-buyer or retailer level. Additionally, we met with other stakeholders in government, traceability services, and the NGO community to decipher the current and potential alignment between data generated during harvest activities and the specific requirements of seafood buyers. These discussions were instrumental in assessing the CT-ROI potential of EM/ER data beyond regulatory compliance. Our aim with end-buyers was to capture their perspectives on traceability investments, data needs from harvest, and their willingness to invest in access to specific KDEs.

Summary of End-Buyer Perspectives

- **Diverse Traceability Practices:** End-buyers' traceability practices exhibited significant diversity, with some employing a mix of electronic and paper-based systems. These systems often lacked interoperability and provided limited visibility to the point of harvest.
- **Regulatory Compliance as a Driver:** Regulatory compliance, particularly with government regulations such as the [FDA's FSMA Rule 204](#), emerged as a predominant driver for traceability investments.
- **Non-Financial Benefits:** We did not uncover any pre-existing ROI models cited by participants from a financial perspective. However, we identified a spectrum of non-financial benefits, including mitigating reputational risks, strengthening buyer-vendor relationships, alignment with corporate sustainability policies, and heightened transparency for consumers. These non-monetary advantages underscored the multifaceted value of traceability.
- **Varied Perspectives on Data Access Investment:** Participants exhibited diverse opinions about investing in access to harvest data. Some expressed the need for additional incentives through regulatory mandates or consumer demands before contemplating investment. Conversely, others recognized the value of this data in bolstering traceback capabilities and optimizing operational efficiency.
- **Limited Utilization of EM/ER Data:** Similar to the other interview groups, we ascertained that end-buyers, processors, and marketers were not currently harnessing data from EM/ER sources.

Summary of Government, NGO, and Technology Provider Perspectives

- **Challenges in EM Implementation:** Our interviews illuminated the challenges around EM implementation, including issues related to cost, data confidentiality, and the need to reduce cost to foster widespread adoption.
- **Primary Use of EM/ER for Compliance:** Presently, EM/ER primarily serves compliance and bycatch mitigation purposes, with minimal to no market utilization. This signifies that the technology is not being harnessed to achieve outputs beyond its original design.
- **Limited ROI Perspectives:** We identified a scarcity of existing ROI perspectives or assessments among governments.
- **NGOs Pioneering Data Use Cases:** Certain NGOs are actively exploring EM/ER data use cases that go beyond regulatory compliance, signaling a growing interest in broadening data utilization to meet market demands.
- **Technology Provider Focus:** Technology providers have primarily focused on first-mile traceability, catering to consumer markets and regulatory requirements. There have been barriers to extending these services to end-buyers for comprehensive electronic traceability, underscoring the need for heightened collaboration and innovation in this domain.

In sum, our stakeholder interactions unveiled a nuanced landscape of EM/ER implementation and data utilization, diverse perspectives on ROI, and diverse traceability practices and data needs within the end-buyer community. As the seafood industry becomes increasingly aware of the broader benefits of traceability, the adoption of more sophisticated data sets and evaluation methods is likely to grow. Our findings suggest that while there is potential and readiness to utilize EM/ER systems to leverage more complex datasets, it is still an evolving landscape.

Conclusion

The concept of CT-ROI and tailored metrics and evaluation criteria through the BEST provide a new and innovative approach for evaluating the broader impacts of traceability programs. FishWise hopes that CT-ROI will serve as a catalyst for traceability advancement within seafood supply chains, including the improved integration of eCDT technologies like electronic monitoring. It is still considered too early to rely on markets alone to catalyze EM/ER adoption because the focus is currently on achieving the first level of compliance and monitoring across fisheries. However, once this baseline is established, it will become more feasible to expand data use and unlock further benefits.

Based on FishWise's research, there is already sufficient data and interest for companies throughout global seafood supply chains to begin adopting and measuring CT-ROI for their traceability programs.

Going forward, FishWise will work with companies and collaborators to tailor CT-ROI indicators to their specific needs and embed them into environmental and social due diligence plans. CT-ROI provides a much more nuanced understanding of the true value of traceability investments than traditional ROI definitions and, when scaled, can give stakeholders a better understanding of the drivers of data utilization and investment. It can also provide measurable benchmarks for evaluating the broader impacts of traceability programs, encompassing social, environmental, and economic benefits. By applying these evaluation methods and fostering collaboration within the seafood industry, FishWise aims to drive greater transparency, sustainability, and accountability.

If you or a company you work with are interested in learning more about measuring CT-ROI in your supply chains, please reach out to info@fishwise.org.

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