SALT
SEAFOOD ALLIANCE FOR LEGALITY & TRACEABILITY

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U.S. RETAIL TRACEABILITY TRENDS

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Introduction

Globally, seafood supply chains are complex and continue to become more so. This complexity has led to opaque product journeys for much of the seafood consumed in the United States (U.S.). Combined with an increasing number of claims of illegal fishing, labor abuses, and mislabeling of seafood at markets, traceability has become a more prominent tool to mitigate risks, beyond the food safety concerns it was initially designed to address. Traceability, with transparency, empowers businesses to monitor the sustainability and legality of their products, and allows businesses to be held accountable to their commitments and policies.

Drawing from FishWise's nearly 20 years of experience and feedback provided by U.S. retailers, this document outlines how seafood traceability in the U.S. has changed over time and how retailers have responded to this evolving landscape. It will culminate with insights for the future of traceability and what may lie ahead for retailers.

Past
The progress made, the tools used, and how seafood traceability evolved

Present
The current state of traceability in U.S. seafood retailers

Future
Upcoming priorities and opportunities to drive traceability and transparency forward

This in-depth review highlights how retailers have adapted over time to address the need for end-to-end, electronic, and interoperable seafood traceability to combat illegal, unreported, and unregulated (IUU) fishing. There is intrinsic value in documenting past, current, and future obstacles and opportunities for improvement to note how previous challenges have been overcome, and share lessons learned. The trends and findings described below help to document the progress made and demonstrate the influence retail companies have on the entire supply chain as end-buyers.

Why Retailers?

This review focuses on retail companies because they are in a unique place within global supply chains - they are often the last point of sale before consumption and require the most data for full chain traceability. Retailers can leverage their purchasing power to affect the production practices in global value chains to meet regulatory and consumer demands, without the need for introducing and passing new time-intensive regulations. Sourcing decisions and supply chain engagement can incentivize investment in traceability best practices: end-to-end, electronic, and interoperable systems. Additionally, if industry collectively supports something, they can generally influence governments' decisions regarding traceability, in turn, creating political will.

Governments, industry, and non-profits can benefit from the findings of this review.

Government

Seafood importing countries can examine what has improved U.S. seafood traceability and transparency, identify what is still needed, and highlight what can be adopted for their national traceability programs.

Industry

Upstream supply chain companies (harvesters, processors, and suppliers) can better understand priorities of the retailers or end-buyers in their supply chains. Additionally, sharing progress and efforts towards full chain traceability can incentivize other retailers to prioritize responsible sourcing commitments.

Non-profits

Non-governmental organizations (NGOs) working with industry partners can learn how long-term efforts by retailers and NGO partnerships have improved traceability and transparency over time to complement industry progress.

The U.S. is one of the three major seafood importers along with the European Union (EU) and Japan that has introduced traceability legislation to address the health safety and legality risks associated with imported products. The U.S. did not prioritize seafood traceability as it did with other commodities, such as meat products, that have been inspected since 1906 (Federal Meat Inspection Act, FMIA). It was not until 1991 that the U.S. Food and Drug Administration (FDA) formed the Office of Seafood for seafood inspections. To further mitigate seafood risks and support seafood inspections, the National Seafood Inspection Laboratory (NSIL) uses its expertise to aid fishery management and data collection programs at the Office of Sustainable Fisheries in the National Marine Fisheries Service. NSIL tested seafood from 1988–1997 and discovered that 37% of fish and 13% of other seafood were mislabeled (Boyle, 2012). These findings demonstrate the importance of prioritizing seafood traceability not only for monitoring food safety to prevent food-borne illnesses, but also for verifying legality to combat seafood fraud and IUU fishing.

"Traceability is a tool to support the fulfillment of regulatory obligations, reduce liability through due diligence, protect brand integrity and company reputations, and reassure customers that their supply chains can be trusted."
(Lewis and Boyle, 2017)

Past: Progress Made

In the past several decades, U.S. retail companies have made progress integrating traceability into their business practices. Traceability has become a necessary tool for supply chain management as food systems have globalized and infrastructure has improved to mass produce, process, and store products. It wasn't until the early 1980s that the term "supply chain management" was coined (Alfalla-Luque and Medina-López, 2009), which requires traceability and transparency efforts. Traceability is the tool used to collect and access the information associated with the events of a product's journey from raw production to end consumer - or from bait to plate. There are many forms of traceability (e.g., paper-based, emailed spreadsheets, documents and invoices, QR codes, etc.). Transparency, on the other hand, is about having access to information beyond a product's transactional history, such as

business practices, processes, licenses, etc. that can be used to assess compliance or risk (Seafood Traceability Glossary).

Although traceability is a relatively new concept, companies are motivated to improve the traceability of globally traded commodities, like seafood, to meet consumer demands, remain competitive, and meet regulatory compliance. Implementing traceability systems can be challenging, but by working directly with NGOs and/or with working groups, U.S. retailers can accelerate their progress. However, implementation takes time and governments must recognize industry's capacity issues to fulfill compliance needs readily. The past Country of Origin Labeling (COOL) requirements revealed that it takes time for companies to adapt to new data requirements and/or formatting needs.

U.S. retailers remain committed to improving traceability by investing in personnel, suppliers with shared traceability values, NGO partnerships, and systems that can automate whether a product meets policy. California Environmental Associates' (CEA) report (2020) states that top North American retailers have made commitments to sustainable wild-sourced seafood, demonstrating industry leadership. Of those that have made public commitments, most of the leading retailers have partnered with NGOs belonging to the Conservation Alliance for Seafood Solutions (CASS): Environmental Defense Fund (EDF), FishWise, Gulf of Maine Research Institute, Monterey Bay Aquarium Seafood Watch, New England Aquarium, Ocean Wise, Sustainable Fisheries Partnership (SFP), and World Wildlife Fund (WWF).

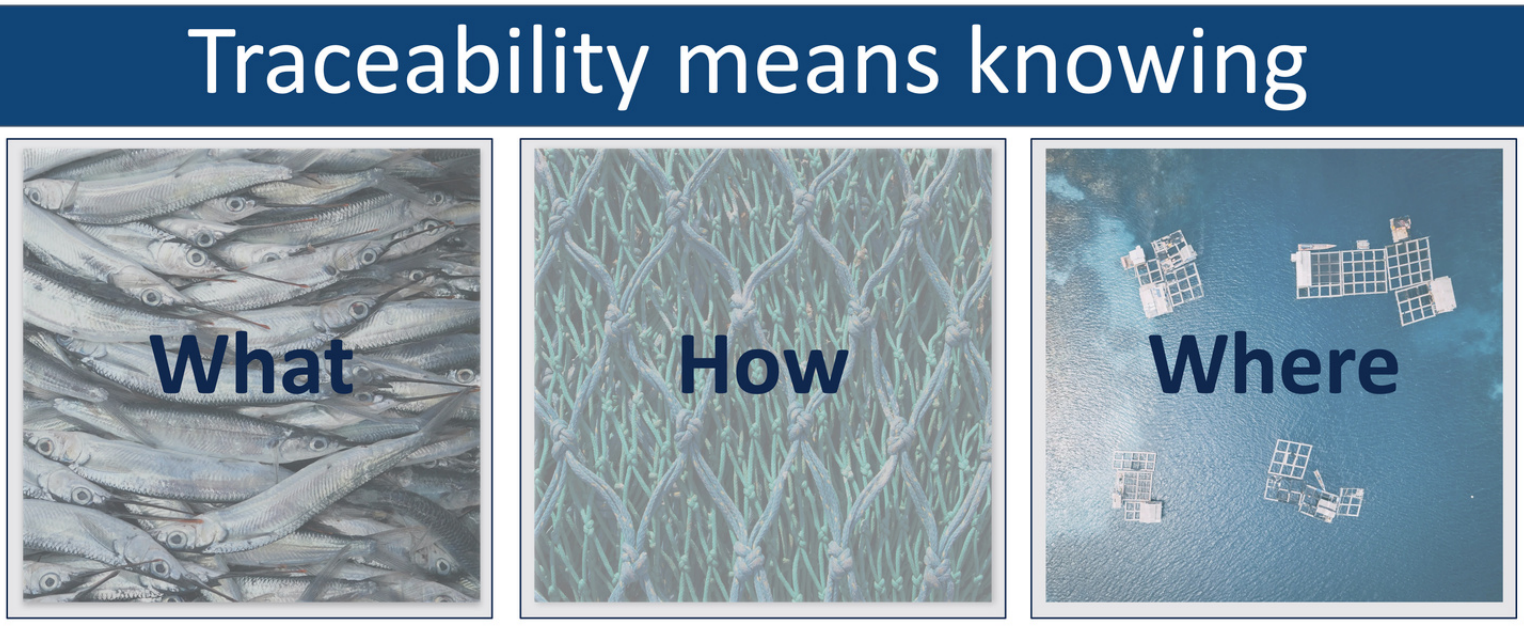
Approaches to Traceability

Industry and NGOs priorities have not always aligned, and in the 1990s conservation groups and industry may have considered themselves to have conflicting goals. However, progress has been made to work together to find solutions to the shared challenge - protecting the long-term seafood supply (CASS, 2017). In 2008, the CASS released A Common Vision for Environmentally Sustainable Solutions, which outlines steps businesses take to implement seafood commitments that improve the sustainability of ocean ecosystems. This served as the foundation for many of the member NGOs working to develop commitments with retailers (e.g., EDF and H-E-B, SFP and Giant Eagle, SFP and Global Sustainable Seafood Initiative (GSSI) and Publix, and WWF and The Kroger Company). The Common Vision (2021) has gone through several iterations as seafood sustainability evolves to include traceability and social responsibility considerations, as have the commitments and policies of U.S. retailers.

As these corporate sourcing policies developed, seafood certification and ratings also evolved to address the challenge of identifying responsibly sourced products. Many policies cite certifications and ratings to advise sourcing decisions. Monterey Bay Aquarium's Seafood Watch program became an approachable, science-based resource for both consumers and businesses alike to inform purchasing decisions. Also widely referenced is the Marine Stewardship Council (MSC) certification, which publishes a Fisheries Standard, a guideline for scientific third-party assessment of the sustainability of a fishery. MSC's Chain of Custody standard for supply chain businesses requires a traceability system to be in place to ensure certified products were not mixed with uncertified products. MSC also continues work to develop a Pathway to Sustainability for fisheries, especially small-scale fisheries, that are data poor and have an economic barrier to receiving certification. These ratings and certifications rely on available fisheries data, such as stock assessments, to assess if a fishery is well-managed and can be considered environmentally sustainable. As more eco-labels and rating tools became readily available, avenues to help progress seafood sustainability continued (e.g., Fishery Improvement Projects, Fair Trade Certification, Global Seafood Ratings Alliance, etc.). However, **it's important to remember that sustainability of a consumer-facing product cannot be assessed and verified without access to full supply chain traceability data.**

As a founding member of the CASS, FishWise understood the importance of industry-NGO partnerships and seafood traceability as a tool to assess sustainability. Since 2003, FishWise has partnered with retail partners to improve seafood procurement, by developing time-bound and measurable seafood policies and commitments, and creating due diligence plans over the years.

In 2005, the U.S. passed Country of Origin Labeling (COOL) requirements for seafood (U.S. Farm Security and Rural Investment Act of 2002). This labeling law required retailers and their suppliers to include a consumer-facing label with information about a product's origin. COOL was helpful because it required several fundamental key data elements (KDEs) to know 1) *what* the product is (common name), 2) *how* it was harvested (wild or farmed production), and 3) *where* it came from (country of origin). As FishWise began developing responsible seafood programs with its partners, the initial priority was to improve data collection of the COOL KDEs. The term "country of origin" may seem intuitive, but the misunderstanding between the government and industry made it difficult to capture the correct information. Country of origin refers to the location where the last substantial transformation occurred, which can be different than where the fish was harvested (catch country). **Even though COOL became a requirement in 2005, retailers were still challenged with collecting this information from its supply chain 10 years later (Figure 1). This implementation challenge demonstrates the importance of clearly defined definitions and government outreach and communication when rolling out new regulations.**



FishWise worked to verify the quality of the COOL data collected and often used tracebacks (i.e., desk audits) to track a product back to its origin to verify product claims (e.g., certifications, origin, legality). Supply chain documentation needed to be available upon request to execute verification exercises successfully. Especially as traceability expectations continued to develop and KDEs changed, verification was, and still is, an important due diligence activity.

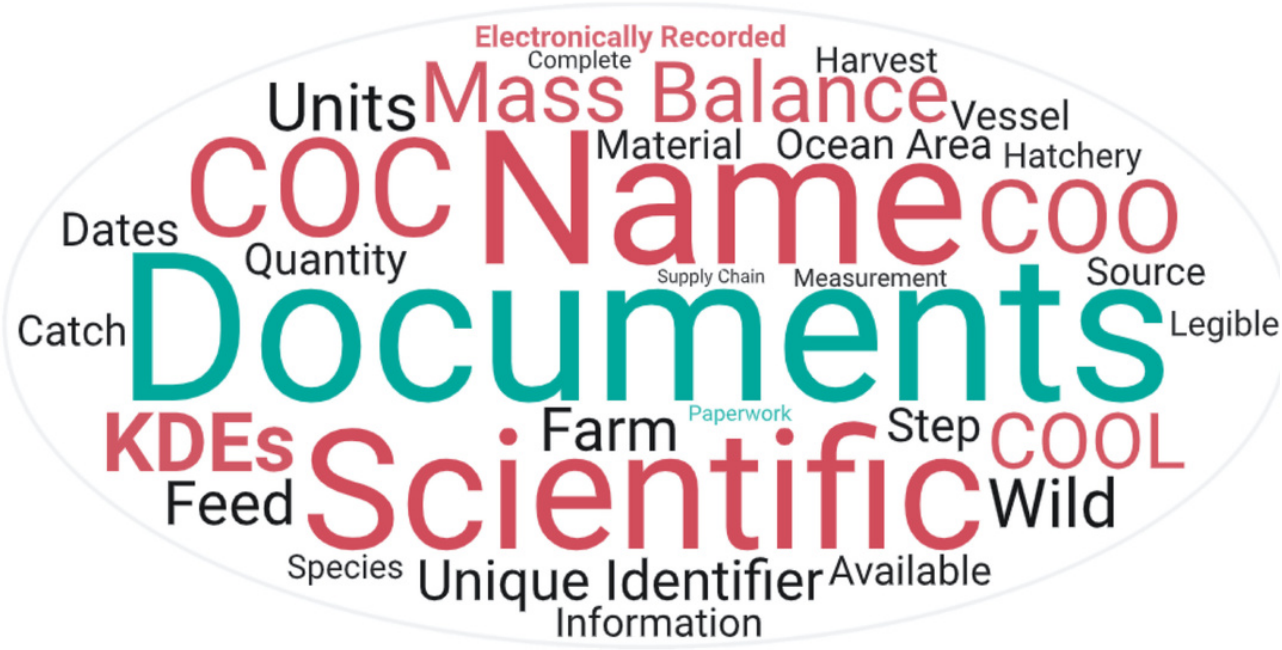


Figure 1. 2015 Word Cloud. Words derived from FishWise priorities for industry partners in 2015. Key priority words are in red and words associated with paper-based traceability are in teal. Country of Origin (COO) and Chain of Custody (COC) are abbreviated.

FishWise prioritizes traceability *and* verification to mitigate IUU fishing and seafood fraud risks in supply chains, and believes that both industry and government have a role to play. The U.S. has taken several actions over the last decade to combat illegal products from entering the U.S. market. A federal government Task Force on Combating IUU Fishing and Seafood Fraud was formed in 2015, and in 2016, the Port States Measures Agreement (PSMA) - of which the U.S. is a signatory - went into effect. In the following year, recognizing that IUU fishing is a global problem, FishWise recommended that industry engage with governing bodies (e.g., Regional Fisheries Management Organizations, sign-on letters, etc.), as a way to demonstrate industry commitment and communicate challenges and opportunities.

"Implementing end-to-end interoperable electronic traceability is one way companies can improve access to information about the legality of the products they handle. Traceability systems can make it more difficult for illegal or undocumented products to enter supply chains if standardized data fields are requested and the accuracy of reported data is subsequently verified."
(Lewis and Boyle, 2017)

Past Challenges and Successes

Despite the progress made, one recurring challenge has been to move away from "one-up, one-down" traceability systems. Traditionally, product data has been collected on paper logs and translated up the supply chain. This process allows companies to understand one step below or above in the supply chain - or "one-up, one down" traceability. This form of traceability is designed to support business services, such as inventory control, and to assist with product recalls, but does not accurately provide verifiable product data from beginning to end. Moving away from this limited traceability system has challenged retailers to require increasing amounts of product information - back to harvest and/or farm.

Based on the SALT survey responses (n=6), some U.S. retailers credit accomplishments in traceability practices over the past decade with:

- investing in a person or team to manage traceability within their company;
- adopting an internal traceability system that can automate whether a product meets sustainability policy and improve end-to-end traceability;
- changing sourcing to seafood companies that share traceability values and can confidently produce products that meet policy, and;
- investing in NGO partnerships.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SALT asked retailers what they perceived as the main drivers that have improved traceability over the last decade, and one survey respondent noted, **"[traceability] is simply the right thing to do."** Beyond that, consumer demand and business competition - both rooted in financial incentives and brand integrity - have driven the majority of these accomplishments (Figure 2). Consumer demand motivated retailers to prioritize seafood traceability and sustainability policies and commitments. As retailers continue to publish sustainability commitments and prioritize stronger traceability practices, other retailers follow suit to remain relevant and competitive in the retail space. Other drivers of improved traceability included regulation (e.g., COOL), technological advancements (e.g., blockchain), and environmental NGO campaigns and reports.

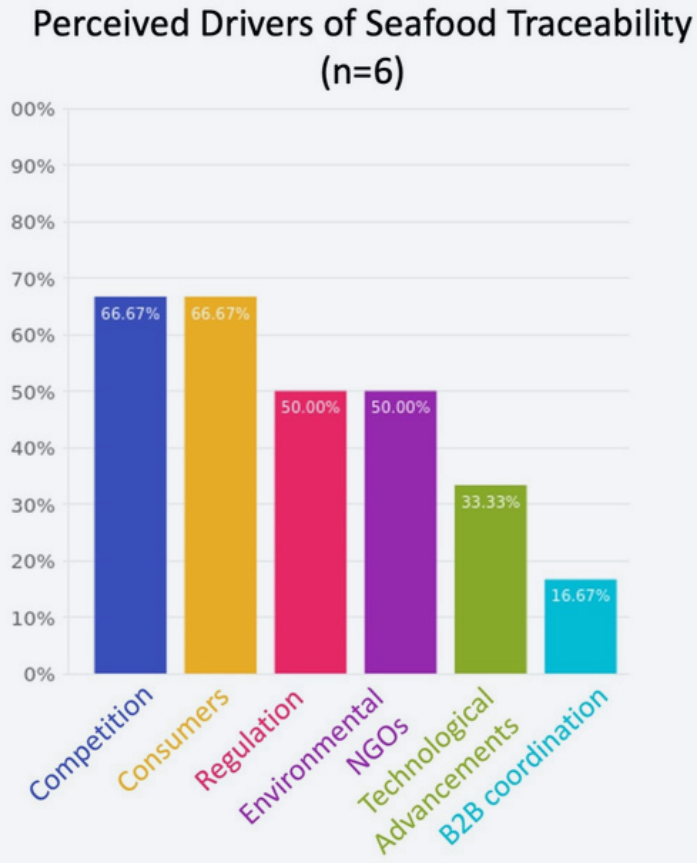

Figure 2: Survey respondents (n=6) were asked to what they perceived to be the main drivers of seafood traceability progress. Respondents selected the most three relevant drivers. Business-to-business coordination is abbreviated as B2B coordination.

Greenpeace's Carting Away the Oceans has proven to be an important NGO campaign to measure U.S. retailer progress in sustainable seafood procurement. In 2008, Greenpeace surveyed 20 major U.S. retailers against four seafood sustainability criteria: i) policy, ii) initiatives, iii) labeling and transparency, and iv) inventory. **In year one, no retailer passed, but by the 10th year, 90% of retailers received a passing score**. After seeing the success from its reports across U.S. retailers, Greenpeace is using its survey to now address new priorities, including human rights in tuna supply chains, as well as focusing efforts on the U.S. Food Service Sustainability Scorecard (CEA, 2020). These reports have been helpful in documenting the progress of U.S. retailers over time and demonstrate how companies have overcome challenges to improve responsible seafood sourcing.

Present: Current State of Traceability

There is currently an effort to move away from one-up, one-down traceability that has been a challenge in the past and transition to tracing entire supply chains. New standards and best practices have been developed to accelerate this transition. The Global Dialogue on Seafood Traceability (GDST) offers the first seafood specific standard for data collection and provides a common data language for the entire supply chain. Collaboration across supply chain companies is essential to implement this common data language, and U.S. retailers are engaging with their suppliers as these new expectations are developed.

Although there is an increase in electronic traceability adoption, retailers are not yet relying solely on electronic traceability. Paper-based systems are still prevalent, especially to verify product claims and combat legality risks. **Full chain, electronic, and interoperable traceability to combat IUU fishing, verify sustainability claims, and assess whether a product meets a company's policy are current priorities.**

Developing corporate policies and goals is a critical first step to committing to seafood traceability improvements. Many U.S. retailers have now made public-facing commitments and/or participated in industry and/or NGO working groups (Table 1), which are important when it comes to sharing goals and policies with consumers and encouraging corporate transparency. When

designing policies and commitments, goals need to be measurable and time-bound to inform progress. Sustainable seafood commitments are often the first step retailers take when implementing a responsible seafood program and are published while the company reviews and vets products against their new policy (Business Commitments to Sustainable Seafood: Success Stories and Lessons Learned, 2014).

Table 1. Working Groups engaged with industry

Working Groups
• Global Dialogue on Seafood Traceability provides free membership to companies that adopt the GDST standards. Members gain access to members-only discussions and consultations, have a voice in decision making, and contribute to the evolution of the standards. • Conservation Alliance for Seafood Solutions hosts the Global Hub where NGOs, businesses, academics, and human rights and other expert members share approaches and experiences. The Alliance works to develop tools and resources that lead to innovation and increased impact within the community working throughout the responsible seafood movement. • Seafood Task Force is a group of seafood processors, feed producers, buyers, retailers, government representatives and NGOs who have come together to address issues surrounding labor and illegal fishing in seafood supply chains. • The Food Industry Association (FMI)'s Seafood Strategy Committee's mission is to develop a collaborative, voluntary, industry-wide approach to encouraging a sustainable seafood supply for the future through education and best practices. • Global Tuna Alliance is a group of retailers and tuna supply chain companies committed to improving harvest strategies for tuna fisheries; avoiding IUU products; improving traceability and environmental sustainability; progressing work on human rights in tuna fisheries; and implementing the objectives laid out in World Economic Forum's Tuna 2020 Traceability Declaration. • Sustainable Fisheries Partnership's Roundtables bring together major buyers and importers in a specific seafood sector work together pre-competitively to scale-up individual efforts for global reach and policy impact. • NGO Tuna Forum organizes initiatives that bring together NGOs and organizations such as global tuna buyers and fishing industry associations to work comprehensively on global tuna sustainability issues: RFMO management and advocacy, market-based mechanisms for improving sustainability, and on the water research, activities and improvements.

Event-Based Traceability & Data Standardization

As more retailers create seafood sustainability programs, increased data quantity and improved data quality are needed to ensure products are meeting company policies. With this shift towards quality data, there is also a move towards event-based traceability, which allocates certain KDEs to be collected during specific critical tracking events (CTEs) (i.e., catching or harvesting event, processing event, etc.) (Figure 3). CTEs provide uniformity to complex supply chains and the KDEs give visibility into each activity as the product changes hands. Unfortunately, this new organization of data using CTEs has proven to be a challenge for retailers to communicate to vendors and suppliers. **Thus, continued education around retailer-required KDEs and updated supplier expectations is warranted as traceability best practices move away from one-up, one-down systems.** To assist with clear communication of expectations, industry standardization across the entire supply chain helps companies understand their data responsibilities and supports efficient implementation and data sharing.

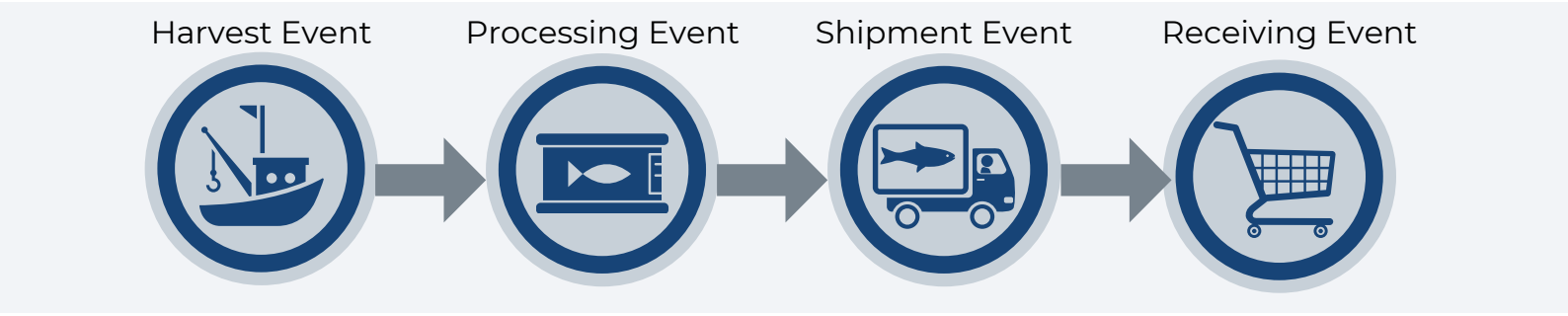

Figure 3. Critical Tracking Events. Simplified supply chain demonstrating the points where data is collected and passed as the product changes hands.

The move towards event-based traceability and standardization of data collection has addressed some of the past challenges that retailers have expressed (e.g., need for a common language, uniformity of data, and end-to-end traceability). It is difficult and time-consuming to assess whether a product meets policy when several formats of information are being submitted. The growing need to establish a common language for traceability information and the digital formats needed to efficiently share information across supply chains fueled the development of the first global seafood standards for tracking products from bait to plate. The GDST 1.0 standards - developed by the industry for the industry - try to meet this need by providing a uniform format for KDEs. **As end-buyers adopt the GDST standards, suppliers can better understand retail company's data expectations by using a universal data language that the entire supply chain recognizes.**

Paper-Based and Electronic Traceability

Data standards are helpful when progressing towards full chain traceability, but the records involved in moving food through the supply chain are still largely paper-based (FDA, 2019). However, more retailers are implementing aspects of electronic traceability. Of those that responded to the SALT survey, a majority use a combination of systems to collect traceability data. For example, some use a combination of paper-based and basic electronic (emailed spreadsheets or data files) traceability. Others use a combination of basic electronic file sharing and third-party traceability software (e.g., Trace Register, VeriCatch, Eachmile, Wholechain, etc.) (Figure 4).

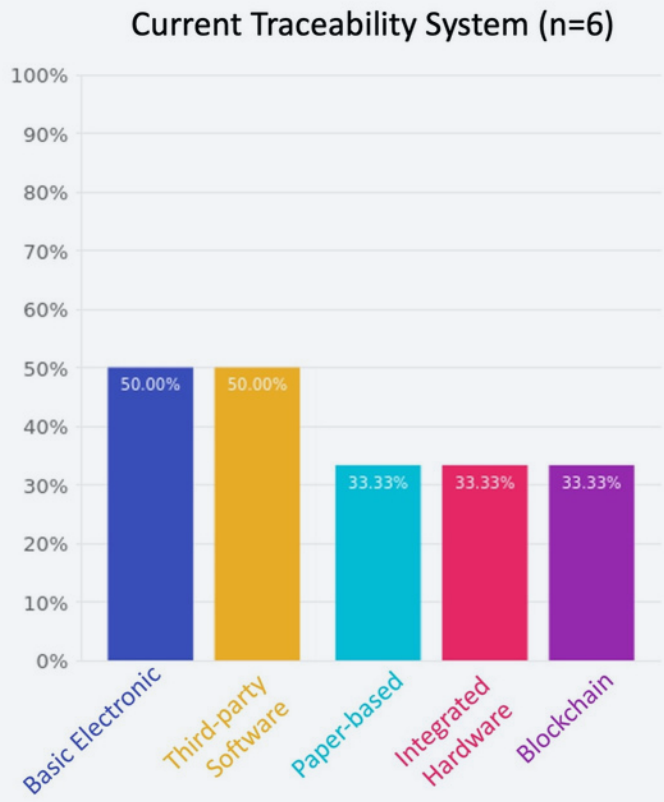

Figure 4. Current traceability system used by retailer companies. Survey respondents were asked to describe their current traceability system and selected all that applied. Basic electronic traceability (emailed spreadsheets or data files), third-party traceability software, paper-based traceability, integrated hardware (RFID tags, scanners, etc.), and/or blockchain.

When conducting a review of FishWise's industry engagement and recommendations for retailers (See Appendix II), it is notable that paper-based documents continue to be a main source of traceability information. This finding, paired with the survey results, shows that the industry is not ready to solely rely on electronic traceability yet. However, current efforts, such as the FDA's New Era of Smarter Food Safety, prioritize tech-enabled traceability to more rapidly track and trace food.

Import Regulations

In parallel with industry efforts to improve data quality and quantity, there is a push for improved traceability and verified legality of products imported into the United States. The Seafood Import Monitoring Program (SIMP), launched in 2018, requires record-keeping for 13 imported seafood species and species groups. Record-keeping includes harvest, transshipment, landing, and processing information prior to import. The purpose of SIMP is to help prevent IUU and/or misrepresented seafood from entering U.S. commerce. And while this program is a good step in the right direction to curbing IUU-sourced products entering U.S. markets, it's not without its limitations and challenges. The proposed Illegal Fishing and Forced Labor Prevention Act could address one large criticism of SIMP by expanding the definition of IUU fishing to include forced labor because "fishing operations that engage in human trafficking and forced labor are often the same ones that ignore fisheries management regulations and laws" (NDRC, 2022). Additionally, this Act addresses existing gaps and challenges with SIMP implementation via better audit procedures, stronger verification of data, and inclusion of more species and species groups under the program.

SIMP reporting requires documentation of at-sea vessel activities, including at-sea transshipment. At-sea transhipment refers to the transfer of fish from one vessel to another. This practice is a common occurrence in pelagic seafood supply chains caught on the high seas (e.g., tuna, mackerel, squid, crab) and describes an event when fresh catch is offloaded to a refrigerated vessel that brings the catch to port. This process helps to preserve the freshness of the catch while allowing fishing vessels to remain at sea to continue harvest activities. Including at-sea transshipment data is important because this node in supply chains has minimal oversight and monitoring, resulting in potentially concerning activity on the water by allowing fishing vessels to spend more time at sea (Global Fishing Watch et al., 2021).

The International Labour Organization Maritime Labour Convention (2006), which establishes the minimum working and living standards for all workers at sea, states that seafarers cannot work more than 11 months onboard a vessel. This means vessels should return to port at least once every 11 months as well as follow other decent working conditions. However, some vessels do not return to port at 11 month intervals and stay on the high seas for years, where oversight and enforcement is limited and working conditions may be dangerous, harmful, or unethical. At-sea transshipment raises the risks of human and labor rights abuses, and mitigating these risks is becoming a higher priority for seafood companies.

Industry's acknowledgment of worker conditions has entered the conversation and retailers are encouraged to make public-facing statements regarding at-sea transshipment and social responsibility (e.g., Albertsons Companies' at-sea transshipment position statement and The Kroger Companies' Statement on Human Rights). Although product data captured via traceability systems is increasingly being used to assess risks beyond traditional food safety or sustainability risks, **at-sea transshipment data collection and the transfer of that information to the retailer still largely remains a challenge.**

Future: Upcoming Priorities

The previous sections demonstrate that seafood traceability has come a long way since its inception as a tool to solely address food safety. The U.S. government and retailers have expanded the use of traceability to address the growing need to combat IUU fishing — which undermines environmental sustainability, labor and human rights, and effective management of fish stocks. In order to address these IUU fishing concerns holistically, there are opportunities to improve traceability to consider social responsibility, advance interoperability of technology solutions, and incorporate robust verification of data and product claims. Companies that invest in transparency demonstrate their commitment to the priorities outlined below and responsibly-sourced seafood products for their shoppers.

Transparency

Now, more than ever, consumers care about understanding the provenance of the products they buy and the companies they are supporting. This interest

comes as a response to concerns around food safety, human rights, data security, and ecological impact (Forbes, 2021). Retailers realize that transparency can differentiate their brands, making them more competitive, and improve consumer trust by telling the story of a product and their company's values. Transparency is achievable, regardless of the size of a company or the products they sell. Tools like ecolabels, QR codes, online supplier maps, and fishery source lists can assist in consumer-facing transparency (FMI, 2018).

Publicly reporting seafood procurement and policies, such as vessel codes of conduct or sourcing requirements, is important for all companies within seafood supply chains. **Suppliers that are transparent regarding sourcing, labor standards and other business practices will be more readily able to demonstrate that products are meeting retailer company policies.** Publicly available tools like the ones below are allowing companies to gain visibility into their supply chains, inform purchasing decisions, and mitigate risks.

Global Fishing Watch provides open access fishing vessel and apparent fishing activity information. It does not yet show small-scale fisheries fishing effort and can be subject to vessel's turning on and off their vessel tracking systems. Transparency of on-the-water activities and the verification of this information has been critically important for fisheries, especially tuna, that are inherently difficult to track and tend to have higher IUU fishing risks.

The International Seafood Sustainability Foundation (ISSF) has developed several tools the ProActive Vessel Register (PVR) and the Vessels in Other Sustainability Initiatives (VOSI) to improve tuna vessel transparency. This information helps seafood companies and the public, alike, understand which tuna vessels have made public commitments to sustainable fishing.

The Ocean Disclosure Project was designed to help seafood businesses disclose annual sourcing details of their seafood production, demonstrating transparency and a commitment to responsible sourcing.

Transparency, though, is about showcasing more than just the successes. Full transparency requires openly discussing company processes, remediation, missteps, and progress. Even if a goal or commitment isn't met, learning and making progress still occurs. Communicating these lessons, successes, and challenges will only help accelerate traceability efforts.

Social Responsibility

Shoppers and businesses increasingly understand the harm of untraceable seafood products as the intersection of human well-being and seafood production is exposed. The media has played a crucial role in raising awareness about ethical concerns around human and labor rights issues in seafood supply chains (Hodal et al., 2014, Urbina, 2015, Mason, 2015, Sutton and Siciliano, 2016) and brought to life the severity of these human rights abuses (Table 2). As noted above, consumer preference does impact retail priorities, and alongside NGO campaigns, there has been incremental movement towards addressing human and labor rights in business practices (Packer et al., 2019, Boles, 2019). To better align the efforts in the growing movement, environmental practitioners, human and labor rights advocates, academics, and industry representatives defined socially responsible seafood in "The Monterey Framework" (Kittinger et al., 20

Although there has been considerable progress in addressing the environmental sustainability of fisheries, improvements in addressing labor and human rights abuses are far behind (CASS, 2021, Seafood Stewardship Index, 2021). Though many brands and retailers are far removed from harvest events, there is an opportunity to implement policies and commitments that increase pressure on fishing companies and buyers to develop and implement social responsibility standards for their operations that are in line with the agreed-upon frameworks (Table 3) (Seafood Stewardship Index, 2021).

Table 2. Human rights issues in the seafood industry. Table presented in the Roadmap for Improving Seafood Ethics' Retailer Worksheet for Internal Discussion.

A reminder of some key human rights issues in the seafood industry	
Forced labor	Excessive fees paid by workers
Child labor	Debt bondage
Limited access to unions and worker organizations	Discrimination against migrant workers
Human trafficking	Hazardous remote work at sea
Lack of traceability	

"Human well-being is among the fast-growing topics of concern within the sustainable seafood community, and at least 40 organizations are now working in this space," according to the CEA 2020 report. However, according to the SALT survey respondents (n=6), industry seems to be prioritizing verification, electronic traceability, interoperability, and transparency over specific social responsibility improvements. This is not necessarily detrimental to this work because comprehensive traceability data, when collected throughout the supply chain and verified, can combat illegal activities and support worker rights (RISE, 2021). Corporate responsibility policies and commitments can be made stronger when paired with transparency and due diligence activities to turn policies into action and measure progress (See Table 4 for Resources), (Packer et al., 2019, Seafood Stewardship Index, 2021).

The need for specific guidance and recommendations that industry can use to address core human and labor rights risks within their supply chains resulted in the creation of the Roadmap for Improving Seafood Ethics (RISE). **RISE is built specifically for the seafood industry as a platform where companies may access credible, industry-specific tools, learning resources, and consultants and other experts to support the implementation of a robust social responsibility program** (Figure 5).

Figure 5. The RISE Foundations. The RISE Foundations are the essential building blocks of a seafood company's social responsibility program.

Table 3. Current (2022) published social responsibility guiding best practices.

Agreed-Upon Frameworks
• United Nations Guiding Principles on Business and Human Rights • International Labour Organization's Core Conventions • Monterey Framework for Social Responsibility

Table 4. Select resources for social responsibility assessments and to help address decent work challenges in the seafood industry.

Resources
• Roadmap for Improving Seafood Ethics (RISE) • The Social Responsibility Assessment Tool • Sustainability Incubator's Labor Safe Screen • Seafood Slavery Risk Tool

"Since 2017, industry has started to make commitments to social responsibility in seafood, particularly based on the Monterey Framework. This is a major new trend for the movement that is in its initial stages and should be monitored over time to better understand both growth in commitments and implementation." (CEA, 2020).

Interoperability

Interoperability is the ability for information technology systems or software programs to talk to each other, or machine-to-machine data sharing (Hardt et al., 2017). Interoperability is critical to achieving end-to-end traceability, which is becoming more and more expected. As the traceability landscape continues to progress and more technology solutions become available (e.g., blockchain, cloud), interoperability is increasingly necessary for successful systems and data sharing. Retailers need their traceability systems to receive and understand data quickly and accurately from suppliers within their supply

chains. The COVID-19 pandemic has demonstrated the importance of strong supply chain management and the need for readily available supply chain data to identify and mitigate risks quickly. The pandemic exposed the interconnectivity and management challenges of global supply chains, which resulted in shoppers seeing sparse grocery shelves (Planet Tracker, 2022). Interoperability improves the resiliency and allows product data to be shared regardless of market or entity.

To achieve true interoperability, there must be agreed upon data standards - those that describe a common data format (syntactic interoperability) and a common meaning (semantic interoperability) to be able to interpret the data (Hardt et al., 2017). As the industry currently adopts the updated GDST 1.1 standards, this set of seafood standards provides the opportunity to improve interoperability of traceability data. To test interoperability, GS1 U.S. and GDST — in collaboration with other seafood companies and service providers — used different types of traceability technologies, including blockchain, to demonstrate successful communication across unique systems using the GS1 System of Standards and the GDST seafood standards (GS1 US, 2021). The pilot's success demonstrates the importance of data standardization and interoperability as federal efforts continue to push towards requiring more digital, tech-enabled traceability systems (e.g., FDA's New Era of Smarter Food Safety). **As more companies adopt electronic traceability practices that align with GDST standards, interoperability throughout the supply chain will better enable end-to-end traceability.**

"Currently, the main obstacles to industry-wide traceability are a lack of interoperability between companies because of system incompatibility, poor data capture and management, and traceability gaps in the supply chain – sometimes caused, for instance, when a whole fish is mixed with others in processing. This lack of interoperability needs to change."
(Planet Tracker, 2020)

Verification

There has been growing excitement over new technology solutions that transfer data more efficiently, especially blockchain technology. Unfortunately, there is no silver bullet to ensure that data entered into a system is correct or truthful, which is why verification is crucial. U.S. retail companies can verify

product data through activities such as supply chain tracebacks, in-person or desktop audits, vessel transparency and verification exercises, or data spot checks. A few technology solutions are beginning to utilize artificial intelligence (AI) to learn supply chain patterns and to be able to highlight unusual activity or data that increases legality risks. These verification activities are critical for comprehensive due diligence and as data quality improves and quantity increases, companies will be able to make more informed purchasing decisions, mitigate risk in near real-time, and showcase commitment and progress towards their policies and commitments.

Verification is needed to not only ensure products are meeting company policy, but also to build confidence that products sold to consumers are legally and responsibly produced. Although federal agencies aim to minimize the risk of illegal products entering U.S. commerce, regulations and capacity to verify legality differ globally as products move through jurisdictions, and there can be minimal enforcement of these regulations or consequences for bad actors. However, retail companies have the ability to use federally-required data to verify supplier performance against policies and commitments and identify any potential legal, reputational, and/or compliance risks within a company's supply chains. This provides a unique opportunity for seafood buyers to economically incentivize good actors through purchasing decisions and commit to working with others to remediate issues in violation of their policy and improve practices throughout the supply chain. It's known that businesses engaging in verification activities can build stronger trust between seafood buyers and sellers, resulting in more secure purchasing relationships. Frequent verification can identify data gaps or mistakes, and, over time, when paired with supply chain engagement, improve the accuracy of end-to-end traceability.

"Verifying the accuracy of data ensures you're working to meet established sustainability, traceability, and/or social responsibility goals. Without it, there is no way to know whether data coming into the system is legitimate, thus placing a huge risk on your company. There is a critical need to ensure verification goes hand-in-hand with electronic traceability systems; they can – and should – happen in parallel." (Lindsay Jennings, 2020)

U.S. Traceability Trends Over The Years: Key Findings

Time

Education

Engagement

Implementation Takes Time

- The delay between NGO and industry priorities needs to be considered as new seafood sustainability concerns and solutions arise. The Monterey Framework was published in 2017 and defined socially responsible seafood; however, it will take time for the industry to react and implement the Framework. One-on-one NGO partnerships and working groups help retailers to address topics as they arise.
- It takes time and capacity for companies to adapt to new data requirements and/or formatting needs. This consideration is particularly important for the U.S. FDA to consider as they finalize the Proposed Traceability Rule. Industry's responses to the proposed rule suggest prioritizing alignment with existing regulations (COOL, SIMP, HACCP) to streamline implementation.
- Electronic traceability adoption takes time, but must be prioritized. Paper-based systems are still prevalent, and used especially for verification purposes (Appendix II). Standardizing KDEs and improving the interoperability of traceability solutions across seafood supply chains can help accelerate electronic traceability implementation.

Education is Essential

- Collaboration across supply chain companies is necessary for end-to-end traceability. Retailer engagement with their suppliers is important as company expectations and requirements change.
- One-on-one NGO partnerships and working groups provide the space for complex topics and challenges to be addressed without stalling progress.
- Public-facing, corporate transparency differentiates retail brands, improving competitiveness and consumer trust. However, full transparency requires openly discussing company processes, remediation, missteps, and progress. Sharing these experiences with stakeholders will help progress traceability.

Industry Participation is Key

- Retail companies have the power to use their purchasing power to support and incentivize good actors, legal products, and set expectations that can drive traceability improvements in their supply chains.
- Public comment is a beneficial avenue for the industry to raise concerns or support for future policies. Industry insights provide first-hand feedback for stronger, more supported, and impactful regulations. These comments can also address timelines and capacity challenges in implementing new regulations.

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Conclusions

The traceability landscape has shifted and grown dramatically over the past two decades. The industry transitioned from basic data collection to robust, standardized efforts. Retailers, as an end-buyer responding to consumer and regulatory demands, have driven full chain traceability forward and away from one-up, one-down systems, which hinder supply chain risk management. End-to-end traceability will only improve as we continue to implement solutions that are interoperable, electronic, and standardized. As a tool to collect product data, traceability is powerful when paired with verification and transparency. These activities simultaneously support due diligence and holistic sustainability efforts that address the need for an environmentally sustainable, socially responsible, and financially viable seafood industry.

The trends and findings of this report can help the seafood industry understand the progress it has made, inform other seafood importing country's industries, and demonstrate the power retail companies can have on the entire supply chain. By sharing how progress has been made in U.S. retailers, tools can be adapted to other seafood importing countries. Additionally, broadly sharing retailers' priorities provides context for suppliers and vendors as to what to expect and the broader direction that seafood traceability is moving. A coordinated effort is stronger than a singular one. End-to-end, electronic, and interoperable seafood traceability cannot be achieved alone.

Highlighted Resources

Common Vision for Sustainable Seafood

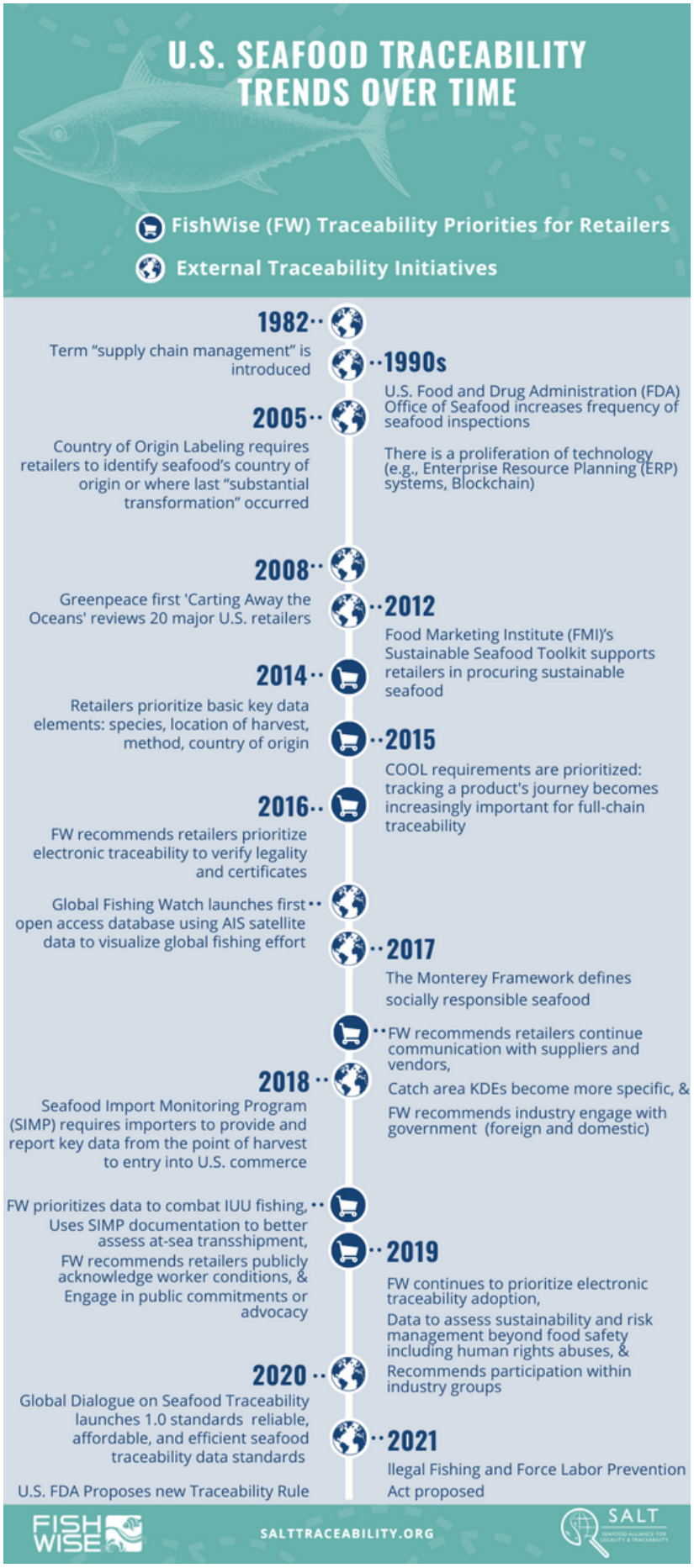
FMI Sustainable Seafood Toolkit

GDST 1.0 Implementation Roadmap & Toolkit

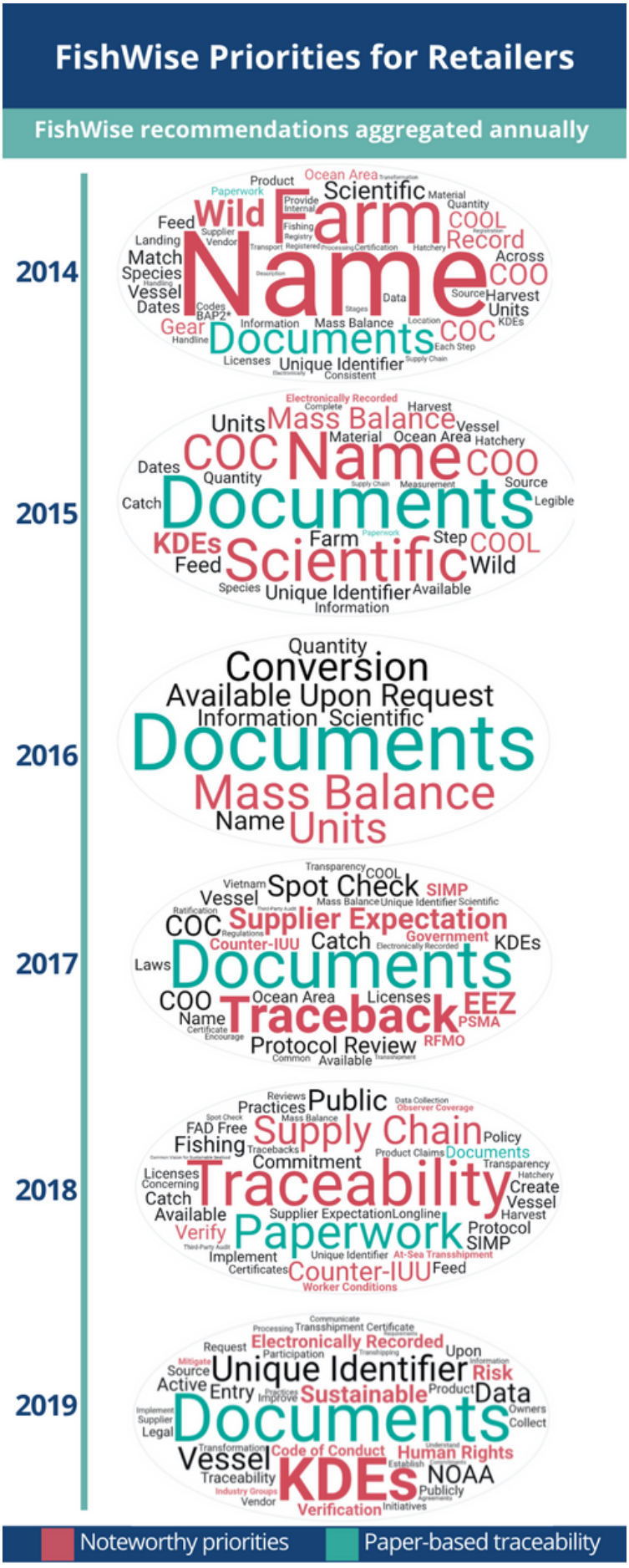
Implementing Traceability: Seeing Through Excuses

Unlocking the Key to Interoperability and Traceability (webinar recording)

Appendix I. Traceability Timeline



Appendix II. Word Cloud Analysis



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