2008-2022 RETROSPECTIVE

A Note from CEA

For nearly two decades, CEA has worked alongside the sustainable seafood community as it has tackled one of the greatest threats to global ocean health: sustainable and responsible management of the world's fisheries and global seafood trade. We have had the privilege to conduct dozens of research assignments to surface insights into discrete components of the sustainable seafood community's work, including markets-based strategies. These studies and our long-term engagement with the field have given us a vantage point with which to see the overarching arc of undeniable—although not always consistent—progress in the seafood markets space. We see this arc as unfolding across four major (if not over-simplified) phases of the movement:

1) Early success: The first markets-based efforts deployed a novel approach to successfully leverage buyer influence to generate change on the water. Engagement of EU whitefish and commitments from major buyers such as Walmart were early and significant wins that gave momentum to markets-driven strategies.

2) Global expansion: Continued and consistent growth in buyer commitments in North American and European markets was accompanied by rapid expansion in the certifications and ratings space, with increasing numbers of fisheries certified, rated, or in improvement projects.

3) Recognition of limitations: As the movement extended its reach, challenges around effectiveness and applicability of markets-based approaches for more diverse fisheries (especially small-scale and low-income-country fisheries) began to emerge. These were accompanied by concerns about transparency and verification of improvement, unintended consequences and, perhaps most significantly, the unaddressed issues of human rights and social responsibility within these environmentally oriented improvement models.

4) Adaptation and evolution: This is an era of innovation across markets-based strategies as a response to overcome known challenges. And this is where the movement currently sits, with a substantially broadened scope of work and diversity of actors compared to where it started.

This journey of seafood markets work achieved enormous, if not unprecedented, scale among ocean conservation initiatives, and it has also struggled to convert that scale of engagement into widespread and lasting change on the water for many of the world's fisheries. As you read the following retrospective, keep in mind that the patterns that emerged from our analysis of the By the Numbers reports are, by design, predominantly based on quantitative data, which tends to emphasize limitations and stuck points. Still, much of the progress in the movement lies within the qualitative realm, in the growth of trust between industry and NGOs, and in the uptake of tools and resources resulting in greater access to improvement work—none of which can be "readily" measured and thus does not feature in these reports.

We provide this retrospective to help synthesize a complex movement's history, based on the belief that the lessons that can be learned from the emergent patterns can inform the ongoing evolution of the space. And we recognize that this retrospective is only one part of a larger story of progress.

For a comprehensive evaluation of the seafood markets work, we point readers to the Global Seafood Markets Strategy Evaluation published by Ross Strategic, Global Impact Advisors, and Eon Impact Consulting in 2020.

Introduction

This year's "Progress Toward Sustainable Seafood – By the Numbers" report is the seventh in a series that has spanned a decade of growth and change in the sustainable seafood movement. For 14 years, these seven reports have aimed to regularly aggregate and update "readily available" data and to provide reliable progress updates for funders, NGOs, industry, and other stakeholders invested in markets-based efforts to drive sustainable seafood. As such, the reports have served as valuable onboarding materials for NGO staff and donors to better understand seafood markets work; content from the reports has also informed evaluations of markets-based approaches and provided information for strategic discussion and decision-making across the seafood community.

But new dynamics in the sustainable seafood arena—the need to better address social responsibility and small-scale fisheries, along with other growth areas—require a new approach to effectively set baselines and monitor impact. Thus, the 2022 report may be the last of its kind. CEA offers this retrospective as an opportunity to look back across the seven reports and share insights into patterns and trends that reflect where momentum has grown and stalled over time.

Confined to the content of the seven reports, the retrospective offers insights on the movement's evolution, filtered through the lens of markets-based initiatives rooted in the dominant theory of change from the NGO community in 2010. This is not an evaluation of the sustainable seafood movement or markets-based strategies; instead, it is a reflection told through this particular window into the past 14 years of effort in the space, with a few important caveats:

- *The retrospective is conservative in showing change*: 1) reports were published every two or three years, and 2) reports added content only when a topic was large enough to reflect a shift in the work or community perspective, as defined by the community, its funders, and CEA's collective perception
- *Only certain aspects of seafood markets work are captured*: The reports generally align with the theory of developed around 2010 by what would become the Conservation Alliance for Seafood Solutions.
- *Reports are rooted in the original baseline data:* Reports continually grew in length, but always had to balance expansion to reflect new and changing focal areas while still providing updates on the original topics and data streams.

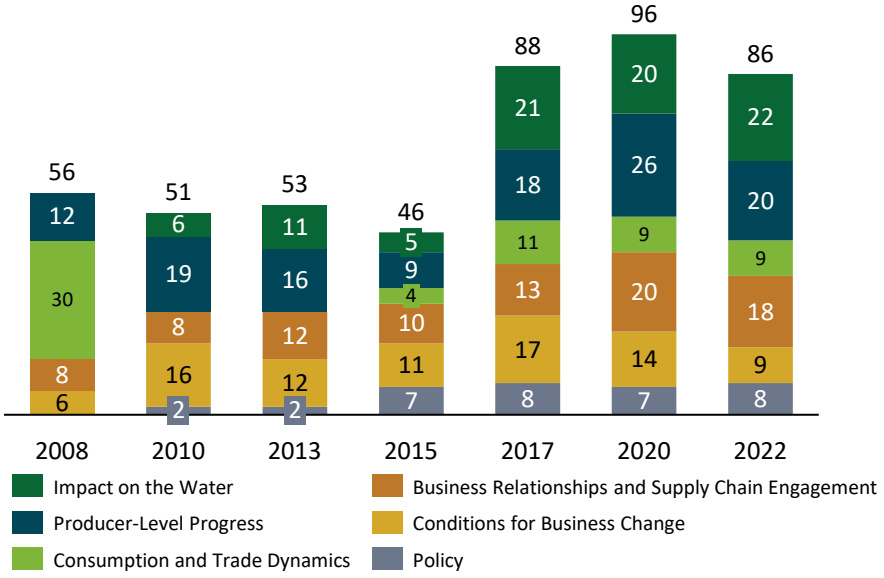
High-Level Themes

The lookback across the reports revealed seven key themes that reflect where markets-based work has both found success and become stuck. Together, these patterns can inform where the sustainable seafood movement, including markets-based initiatives, might go next. The themes are:

1. More data leads to expanded understanding of global fisheries health, in part due to markets-based work.
2. Overfishing persists globally, but stock health has increased in original focus area (US and EU) of markets-based strategies and where fisheries governance is strong.
3. Focus has turned toward Asia as a region with new growth markets, with significant production, and as critical for IUU fishing and human rights work.
4. People matter, as reflected by the rise of human rights and social responsibility efforts.
5. Buyer engagements have expanded across nodes, geographies, and types of commitments.
6. Traceability and transparency have moved from fringe to core: from initial efforts focused on a few traceability vendors helping companies track and trace within their own operations to global standards for end-to-end data collection and sharing.
7. The aquaculture sector has seen growth and innovation, especially in standards and certifications over time.

Together, these trends reflect a consistent and significant expansion in the scope of markets-based work over the past decade. This expanded focus is evident in the overall growth of the reports through time (see Figure 1) and shows up in this year's 2022 report, which for the first time includes analysis focused on climate impacts and a dedicated social responsibility section. This overall expansion of focus and effort is a sign of maturation of the movement, and partly reflects learnings from where strategies have fallen short, requiring new and different tactics.

Content pages by report category, 2008-2022[1]



1. Total numbers on top of each bar represent total number of content pages. Total pages, including executive summaries, introductions, and appendices, are: 83 (2008), 57 (2010), 59 (2013), 51 (2015), 96 (2017), 103 (2020), and 122 (2022)

Theme 1: More data leads to expanded understanding of fisheries stock health

A lookback across reports reveals an increasing diversity of analyses and data that inform how we know what we know about global fish stocks, including from markets-based efforts.

The earliest reports shared FAO global statistics only—these were the go-to resource. Over time, the reports included findings from the Sea Around Us project, RAM Legacy, and then-current publications. This expansion helped highlight both discrepancies in estimates of global stock status and the uncertainty that exists in estimating stock health (due, for instance, to high levels of unreported catch). In addition, new indices emerged that focused on governance status (e.g., Fisheries Management Index, Fisheries Governance Index) and issue-specific evaluations (IUU Fishing Index). This expansion provides more opportunity for improved analyses of stock health and fisheries management capacity around the world.

Markets-based approaches have contributed to this data, increasing understanding of what is happening on the water. For example, FishSource profiles use a relatively rapid assessment approach to provide seafood buyers with timely and consolidated information on the sustainability of select fisheries and aquaculture sources.

The number of seafood certifications; the overall amount of seafood that is rated, certified, or improving; and the types of aquaculture and wild-capture fisheries that are rated or certified have all grown, providing greater insight into the status of these fisheries and aquaculture production operations, if not some confusion in the marketplace.

Consistent and continual growth of MSC-certified seafood (see Figure 1) remains a hallmark of sustained, market-driven approaches to more sustainable fisheries. Once entirely supported by philanthropy, MSC's 2021 annual report notes that 85% of its income comes from logo licensing, reflecting a durable model for industry-supported improvement work. Continued support programs such as MSC's Capacity Building Program seek to expand the organization's reach to lower-income countries, especially in the Global South, where certified fisheries lag.

Interest in more global coverage is also reflected by Seafood Watch's recently announced move to focus on fisheries in production regions outside the US.

Theme 1: More data leads to expanded understanding of fisheries stock health (continued)

Figure 1. Percent of seafood that is certified, rated, and/or improving, 2013-2022[1]

Seafood Metrics Report Year Published	Certified, Seafood Watch "Best Choice," "Good Alt.," "Avoid," or improving (in a FIP/AIP)[2]	MSC certified[3]	Improving (in a FIP)	Seafood Watch "Best Choice," "Good Alt." rated[3]	Seafood Watch "Best Choice," "Good Alt." rated[3]
Production source	***Wild-capture and aquaculture***	***Wild-capture***	***Wild-capture***	***Wild-capture***	***Aquaculture***
2013	Not available[2]	12% (8% MSC certified, 4% in full assessment)[3]	11.9%	4.7% (0.9% "Best Choice," 3.8% "Good Alt.")[3]	6.7% (5.3% "Best Choice," 1.4% "Good Alt.")[3]
2015	Not available[2]	10.8% (8.5% MSC certified, 2.3% in full assessment)[3]	10.6%	6.0% (1.0% "Best Choice", 5.0% "Good Alt.")[3]	7.1% (4.9% "Best Choice," 2.2% "Good Alt.")[3]
2017	Not available[2]	13.7% (12% MSC certified, 1.7% in full assessment)[3]	9.3%	6.0% (1.1% "Best Choice," 4.9% "Good Alt.")[3]	11.6% (9.2% "Best Choice," 2.4% "Good Alt.")[3]
2020	31%[2, 3]	11% (10.1% MSC certified, 0.9% in full assessment)[3]	7.4%[3, 4]	5.9% (1% "Best Choice," 4.9% "Good Alt.")[3]	23.1% (21.2% "Best Choice," 1.9% "Good Alt.")[3]
2022	32%[2, 3]	11.2% (10.3% MSC certified, 0.9% in full assessment)[3]	8.9%[3]	5.6% (1% "Best Choice," 4.6% "Good Alt.")[3]	22.5% (20.4% "Best Choice," 2.1% "Good Alt.")[3]

Notes: 1. Percentage changes over time are a result of both production volume changes and new certifications, ratings, FIP, and AIP coverage. 2. In the 2013, 2015, and 2017 Seafood Metrics Reports, information on seafood certifications, ratings, and improvements is not available in aggregate. CEA collected this information from individual organizations and FIP implementers and was unable to account for overlap. In the 2020 and 2022 Seafood Metrics Reports, the aggregated information is from the Certification and Ratings Sustainable Seafood Data Tools (2020 and 2021, respectively) and includes MSC certified, ASC certified, Fair Trade USA certified, Seafood Watch "Best Choice," "Good Alternative" (Good Alt.), and "Avoid", in a FIP, in an AIP, and Best Aquaculture Practices certified. 3. This does not include aquatic plants. 4. FIP volume decreases are a result of a change in FIP volume estimation methods.

Theme 1: More data leads to expanded understanding of fisheries stock health (continued)

In addition to an expansion of certifications and ratings schemes, Fishery Improvement Projects also have expanded in terms of number, diversity of fisheries, and scope:

- From single-species to multi-species;
- From environmental to including social and economic considerations, e.g., SRA Tool, triple impact FIP framework;
- From a geographic concentration in North America to spanning 84 countries as of 2021; and
- From industrial to also including small-scale fisheries
- From mostly north American NGO-led to leadership by industry and local, smaller NGOs

As of the 2022 report, 90% of FIP volume comes from non-OECD countries.

Fishery Improvement Projects increase data generation within their fisheries, with data collection as one of the most common activities across all FIP types. In fact, most Stage 5 improvements in FIPs stem from better understanding of stock health and ecosystem impacts like bycatch due to this new data generation, rather than stock recoveries.

Together, certifications and ratings, FIPs, and other market-driven initiatives have increased visibility into the health of more fisheries than would be possible based on research or government efforts alone. And, as the quality of this data continues to improve, even more insights can be drawn. As shown in Figure 1, starting in 2020, disaggregated data about total percentages of fisheries across certified, rated, or improving categories is now possible.

Theme 1: More data leads to expanded understanding of fisheries stock health (continued)

There has also been significant expansion of certification and ratings efforts in aquaculture production. This expansion is not just in the number of certifications, but also the coverage of those certifications, which include a wider diversity of farmed species alongside processing plants.

Overall, through a combination of increased scientific research efforts and markets-based initiatives, there are more diverse approaches through which stakeholders can better assess the status of fisheries and adjust their strategies. Examples of the varying datasets that shed light on different aspects of global fisheries today include:

- Global fisheries stock health analyses and databases (e.g., FAO State of World Fisheries and Agriculture, Sea Around Us, RAM legacy, Britten et al. 2021)
- Indices of fisheries management and fisheries governance (e.g., Fisheries Management Index, Global Fishing Index)
- Status of sustainability across select (and growing) wild fisheries and aquaculture production (e.g., Seafood Watch and FishSource ratings)
- Status of FIPs: FisheryProgress.org
- Global fishing effort distribution: Global Fishing Watch

Importantly, visibility is growing into the historically opaque distant water fleets and high-seas fisheries. Starting with the 2017 report and continuing to today, multiple analyses have provided more insight into the size and activity of distant water fleets and the level of harmful subsidies that support them.

The major takeaways:

- China and Taiwan are the top contributors to global DWF efforts (60% from 2015-2017) and, together with Japan, South Korea, and Spain, represent 90% of DWF.
- Since 2017, the reports have included findings that show in increasing detail the tens of billions of dollars in harmful subsidies that are flowing from governments around the world to these distant water fleets. The recent WTO agreement to ban harmful subsidies offers an important opportunity to reduce the overexploitation of fisheries, especially on the high seas, with additional negotiations expected in late 2023.

Theme 2: Overfishing persists, but there are bright spots

Expanded understanding of fisheries health reveals a consistent challenge: overfishing persists, and assessments of global stock status are varied. As has been the case since the 2010 report, different analyses and datasets today show negative and positive trends, and uncertainty remains high.

The Sea Around Us project estimates that 20% of assessed stocks were overexploited or collapsed as of 2018. In contrast, FAO's 2022 State of the World Fisheries and Aquaculture report finds the number of landings from biologically sustainable stocks has increased and the number of overfished stocks has steadily decreased since 1974. Yet the fraction of fishery stocks within biologically sustainable levels (about two-thirds) has not changed much over the past decade. Globally, most assessed stocks remain at or beyond full exploitation, most stocks remain unassessed, and stock status in lower-income countries has worsened even as it has improved in higher-income countries.

Uncertainty remains high when it comes to stock assessments and health. Unreported catches likely account for 26% of global catches in 2018, and a 2021 analysis by Britten et al. showed how stock assessments may be overly optimistic, inflating rates of recovery and masking downward trends in biomass. Concerns regarding data deficiencies in Asia first noted by the RAM dataset in the 2015 report remain as of the 2022 report. A significant component of this data challenge is the status of SSFs around the world—many of which remain unassessed. The importance of this sector to global landings, livelihoods, and food security, and concerns regarding how markets-based approaches can best improve sustainability of SSF is a growing trend across reports since 2017 and, importantly, an area of growth for market initiatives such as Fair Trade and FIPs.

After 14 years of monitoring, several areas of progress emerge across the reports in terms of impact on the water:

- Developed countries, especially the US and EU—the two original targets of the markets-based work and two regions with among the strongest fisheries governance (Melnychuk et al. 2017)—are showing signs of improved stock health.
    - In the US, only 8% of the most important federally managed stocks were subject to overfishing in 2021, a decrease from 26% in 2006 (though relatively unchanged since 2015). However, there have been slight increases in the number of stocks added to the overfished and overfishing lists in recent years.
    - In the EU, the proportion of overexploited stocks that have been assessed has decreased from 75% to about 40% over the past ten years. Most improvement is in the Atlantic, as Mediterranean and Black seas fisheries remain poorly assessed and overfished.
- ISSF data show 88% of tuna stocks are at a healthy level of abundance, up from 84% in 2020.
- On a global scale, the proportion of stocks undergoing rebuilding has slowly increased from 1% in 1990s to 12% in 2018, according to the Sea Around Us project.

Theme 3: Focus has turned toward Asia

Over time, reports contain more information on markets, trade dynamics, and fishing and aquaculture activity in Asian countries.

In terms of markets, North American and EU markets are still significant drivers of global imports by value, but species-of-interest trends show markets beyond the US, EU, and Japan—especially Southeast Asia and Asia—are the fastest growing for importing major commodities such as shrimp, salmon, and tuna. Some of this is driven by imports for processing. By 2020, Japan had lost its high-ranked import slot for shrimp and salmon, falling behind other markets outside the US and EU; and for tuna, gradual declines in imports by the US and Japan have occurred. China, meanwhile, appears to have increased its shrimp imports, from 118,000 tonnes in 2017 to 721,000 tonnes in 2019, but these numbers are skewed due to historical underreporting. South Korea is also now a top importing nation of shrimp. The 2017 report found that Asia was "the most dynamic fisheries region in the world; it has been and will continue to be a driver of growth in production, consumption, and trade." Data from the 2020 and 2022 reports support this claim. In 2020, Asia accounted for 51% of global wild-capture production and the vast majority of aquaculture and mariculture production, with China alone contributing approximately 58%.

As of 2022, China has the highest total consumption of seafood, four times higher than that of Indonesia, the next largest consumer. This consumption is supported by China's enormous amount of domestic aquaculture production, so China only accounts for 9% of imports by value, as it produces most of what it consumes and imports lower-value products.

In terms of DWF, harmful subsidies, and human rights issues—all areas of growth in the reports over time—Asia is also a key region. The 2017 report notes that risk to businesses of human rights abuse exposure via their sourcing is highest in Asia and Africa. The 2020 and 2022 reports include findings that Asian countries such as China and Taiwan provide significant subsidies to their distant water fleets, and Asian countries collectively provided the greatest absolute amount of harmful subsidies ($14 billion).

Theme 4: People matter

In 2010, the markets-based theory of change focused on environmental impacts, and social responsibility efforts were not mentioned in the reports until 2017. By then, activity and attention related to social issues in seafood were well underway. The 2017 report updates included FIP implementers incorporating social considerations as part of their workplans, the launch of Fair Trade USA certification in seafood, and increased media focus on social issues in seafood supply chains, in part driven by the 2015 Outlaw Ocean series in the *New York Times*. By 2020, the report provided multiple updates in the social responsibility and human rights arena, including for:

- FisheryProgress, which released their interim policy on forced labor and child labor (2019) and in 2020, was working with a Social Advisory committee to create permanent guidelines;
- Sustainable Supply Chain Initiative (SSCI) collaboration with GSSI for social compliance benchmarking project (2018);
- Socially-oriented initiatives within FIP Implementation, Frameworks and Certifications, and Assessment Tools and Methodologies

This year's report reflects the continued importance and growth of social responsibility work by providing a separate section dedicated to this topic—the first time a new section has been added to the report since its inception. This new social responsibility section reviews ongoing initiatives and current challenges—including tensions around alignment and coordination of efforts across the rapidly growing space (see pages 113-122) on proliferation of tools, guidance, standards, certifications, and policies). From a summary of definitions, drivers, and existing international policies to spotlights on key initiatives, this report's more extensive coverage of the social responsibility space reflects the enormous momentum toward greater engagement and progress on social issues in seafood. As highlights from the 2022 report show, plenty of work remains to be done:

- The 2021 WBA SSI finds that half of the top seafood companies lack commitments to protect human rights
- A proliferation of tools, resources, and policies demands better coordination and alignment among seafood market actors to ensure effective action on social responsibility

There is also evidence of traction on the ground. As of March 2022, 30 FIPs were Social Responsibility Early Adopters, and multiple businesses have supported the new FisheryProgress Human Rights and Social Responsibility Policy. Fair Trade USA continues to grow its number of certificate holders, reporting a 59% increase in volume in 2021 and anticipated 20% growth in 2022.

Theme 5: Buyer engagements expand across nodes, geographies, and types of commitments

Another clear pattern in the reports is consistent growth of different types of industry commitments. From an original focus on North American and European retailers, business commitments and industry-NGO partnerships have evolved to encompass supply chain players from every node in all global regions, serving all types of seafood sectors, in an increasingly wide range of commitments. A few examples highlighting this evolution include:

- 2013: early engagement of Australian retailers
- 2015: first fast food and pet food companies enter into commitments
- 2015: the three largest global contract catering companies make commitments with Alliance NGOs
- 2017: US Foods joins Sysco in commitments, reflecting 69% of market, and smaller companies with smaller market shares start to make commitments (meal kits)
- 2020: top 10 North American seafood suppliers are engaged in precompetitive platforms or seafood partnerships that include cross-cutting themes, such as social responsibility; the six largest retailers in the EU have sustainable seafood partnerships, representing a 25% increase in total sales covered compared to 2017
- 2022: the two largest Japanese retailers and the Japanese Consumers' Co-operative Union have updated, time-bound commitments to sustainable seafood

However, growth has tempered in recent years in some aspects, as new regions and new parts of the supply chain have failed to gain traction after initial engagement. For example, the food service, hospitality, and fast food sectors have been slow to come on board in recent years, and there has been little effort to close the final 10% of the EU and North America retail market that has remained unengaged since 2015.

Where growth is occurring is in social responsibility commitments. The Conservation Alliance for Seafood Solutions' ten-year goal now includes an emphasis on social responsibility: "by 2030, at least 75% of global seafood production is environmentally sustainable or making verifiable improvement and safeguards are in place to ensure social responsibility." Additionally, indices such as the WBA SSI and Greenpeace's Tuna Retailer Scorecard, and industry commitments, such as those under SeaBOS, all include social responsibility components. While there is still work to be done, seafood industry actors around the world are adopting policies and making commitments around social responsibility in seafood.

Theme 5: Buyer engagements expand across nodes, geographies, and types of commitments (continued)

Robustness of commitments is not necessarily reflected in the number of commitments—and a persistent challenge is continued lack of transparency around commitments, including industry engagement in precompetitive collaborations, where understanding platform effectiveness, progress, and collective impact remains difficult to assess. Efforts pushing for greater transparency (e.g., ISSF ProActive Vessel Register, Ocean Disclosure Project) and validation of commitments (e.g., Greenpeace Scorecards) are underway, but more work is needed to improve the quality and transparency of public commitments, including detailing the scope of commodities and products covered, existence of time-bound elements, including measurable sourcing targets (e.g., MSC, Seafood Watch), and consistent public reporting on progress.

Accompanying this shift is an overall increase over time in industry engagement with tools and resources that support sustainable seafood purchasing. Examples include the Ocean Disclosure Project platform, which includes 40 participants in ten countries, including Asia; a near doubling of registered users since 2020 on FishSource; and continued strong growth in industry registration on FishChoice.

And there are signs that replication is happening with some aspects of the business engagement model, as evident in the growth of regional sustainable seafood events, modeled loosely on the SeaWeb Seafood Summit, which have been held in recent years in Latin America and Tokyo. Similarly, the Hong Kong Sustainable Seafood Coalition is modeled after the long-standing UK Sustainable Seafood Coalition, and additional geographies are experimenting with this approach. Likewise, the rapid expansion of precompetitive platforms across commodities, regions, and supply chains is another example of successful business engagement approaches that are scaling worldwide. These early indications of greater awareness of and interest in sustainable seafood are encouraging, but how new market interest will translate into more or better engagement with seafood producers remains unknown.

Theme 6: Traceability and transparency from fringe to core

The need for greater traceability and transparency is highlighted across the reports. Originally, the focus was on technology for data capture within seafood companies, with Trace Register as the sole traceability technology vendor mentioned in 2010. Over time, tracking and tracing efforts expanded from technology-oriented solutions for individual companies to a greater focus on system-level approaches, including implementation of major national and international policy developments, technologies aimed at large-scale monitoring of vessels (e.g., Global Fishing Watch, Oceana's IUU Vessel Tracker), and industry-led standards for traceability (e.g., Global Dialogue for Seafood Traceability).

Over time, these developments were driven, in part, by new policies (e.g., Seafood Import Monitoring Program, Port State Measures Agreement), increased research documenting the extensive ecological, social, and economic cost of IUU fishing, and evidence of continued widespread mislabeling and fraud, especially in the US. Today, the work goes on, as more certifications and ranking systems explicitly incorporate traceability as a key indicator (e.g., WBA SSI) and studies continue to reveal high levels of fraud around the globe.

Finally, new digital tools are providing greater transparency into multiple aspects of markets-based work. Tools such as the Certification and Ratings Collaboration's Sustainable Seafood Data Tool facilitates analysis of the status of certified, rated, improving, and unassessed seafood production across six global programs, allowing for more strategic decision-making by the community. Online reporting platforms, such as FisheryProgress, and the recent AIP Directory, also help stakeholders engaged in markets-based initiatives to more effectively track activity in the space.

Theme 7: The aquaculture sector has seen growth and innovation

Because the origins of the Packard Foundation's seafood markets strategies were primarily focused on wild-capture fisheries, the reports remained anchored in wild-capture-oriented data in order to provide a consistent comparative baseline.[1] Nevertheless, the growth in importance of aquaculture clearly emerges in the reports, as does a pattern of continued innovation within markets-based work.

This is especially so since the 2017 report, which included the notable statistic that, as of 2014, aquaculture provided more fish for human consumption than capture fisheries. Since then, aquaculture production has continued to grow, while capture production has remained relatively flat.

Paralleling this growth in production is a proliferation in aquaculture certification schemes. Certifications such as ASC, GlobalG.A.P., and BAP have maintained strong growth since 2017 across number of facilities, types of facilities (farms, plants), and types of species (finfish, mollusks, crustaceans). As of this year's report, ASC has more than tripled the number of certified farms since 2016, with over 21,000 labeled products, and GlobalG.A.P. has certified more than 2.66 Mmt of aquaculture production across 26 countries.

New tools and approaches demonstrate continued innovation in markets-based work in the aquaculture space. Examples include the BAP online portal, reported in 2017, and the AIP Directory and Seafood Watch's Partnership Assurance Model for farmed shrimp and farmed salmon, included in the 2020 report. Most recently, the 2022 report includes details on ASC's new Chain-of-Custody module, expansion into freshwater shrimp, and a Coastal Habitat Stewardship Fund to provide economic incentives to local communities in exchange for mangrove conservation.

1. Aquaculture was never covered as much as wild-capture fisheries in the reports, despite its substantial growth in production over time. This is one of the inherent biases of the reports' original framing and where new effort may need to occur in future monitoring efforts due to the importance of this production sector to both ocean and human health.

Concluding reflections: Strategic adaptations

As the movement expanded to include more diverse components of the seafood system across more geographies with varying degrees of market leverage, there also was mounting evidence that what worked in the past may not work as well going forward. More time with which to see stagnation or challenges and more information with which to analyze the sustainable seafood landscape have raised questions about the effectiveness of market levers moving forward. This is especially apparent in the 2017 report, which included the following reflections:

- The status of Asian fisheries is particularly not well known and is flagged as the biggest area of growth in production, consumption, and trade.
- Concern for social and labor issues is on the rise, and it remains unclear how market levers help or possibly harm social outcomes.
- Traditional market levers do not work well for artisanal fisheries, where there is growing need for improvement.
- Western management approaches (e.g., single species focused) may not align with all countries' priorities. For example, single-species management would create a massive drop in profits and productivity for China's fisheries.
- Many new growth markets do not have demand for sustainable seafood.

Starting in 2015, reports also started to highlight emerging concerns about FIPs, including: discrepancies in reporting volumes; that on-the-water improvements stem from better understanding of fisheries health due to new data, rather than stock recovery or reduction in bycatch resulting from changes in fishing practices; and uncertainty in how to make FIPs more accessible to SSF and multi-species fisheries.

Over time, the proportion of new content around consumer behavior and engagement also waned. Media coverage has stayed roughly the same for sustainable seafood issues since 2015, except for increased attention on IUU fishing in more prominent publications such as the *New York Times,* and there has been no real traction with changes in consumer preference, as reflected in studies and online search trends. Consumer behavior remains a difficult lever to push, especially in growth markets, so there has been diminishing focus on consumer preference data in the reports.

Concluding reflections: Growth of collaboration

Partnerships have long been a defining element of markets-based initiatives in the sustainable seafood movement. Over the years, the reports reflect growth in the nature and number of these partnerships, in turn reflecting an increase in overall collective action in the space. Today, many multi-stakeholder collaborations are working to push sustainable and responsible seafood around the world. Highlights of this trend include:

- 2008 and 2010 reports: industry engaging in sustainability partnerships with environmental NGOs; SFP's supply chain roundtables
- 2013 report: precompetitive platforms such as Sustainable Seafood Coalition, SeaPact, and Global Seafood Sustainability Initiative
- 2015 report: Seafood Task Force; Certifications and Ratings Collaboration
- 2017 report: FisheryProgress launches an effort that consolidated numerous disparate NGO information sources and incorporated SFP ratings; Global Dialogue for Seafood Traceability and SeaBos launch
- 2020 report: Conservation Alliance—expansion of Global Hub to industry, social responsibility organizations, and more organizations based in lower-income countries; additional precompetitive platforms such as Global Tuna Alliance, Hong Kong Sustainable Seafood Coalition, and Sustainable Shrimp Partnerships launch

As of 2021, nearly 400 seafood companies are engaged in 16 precompetitive platforms. This reflects an increase from 250 companies engaged in 2018. A 2021 CEA report highlights that suppliers and retailers are the most represented supply chain segments in precompetitive collaborations. Additionally, companies in Western geographies represent the majority of member companies. Further, 15% of engaged companies also hold partnerships with Conservation Alliance NGOs, showcasing the role precompetitive collaborations play in engaging additional actors in the seafood supply chain.

There has also been a significant trend among certifications and ratings organizations to move from launching to aligning efforts. The reports from 2010 to 2015 showed tremendous growth in the number of new certifications coming online, as well as the number of fisheries and farms they were certifying. From 2017 onward, there has also been growth in the number of "meta" initiatives created with the purpose of aligning and validating the rapidly expanding universe of certifications and ratings in seafood (e.g., ISEAL, GSSI Global Benchmark, Certifications and Ratings Collaboration).

Concluding reflections: Expanded scope of markets-based work

Since the first report was published in 2008, the level of complexity and overall scope of work that falls within "markets-based approaches" to sustainable seafood has increased across multiple dimensions. From the number and diversity of FIPs that exist across the globe (154 active as of this report) to more systemic approaches to change, the expanded scope of markets-based work is evident throughout the reports:

- **Buyer engagement geographies**: From an original focus on North American and European markets, recent reports include more content on global trade dynamics and market demand, especially from Asia.
- **Geographies of engaged fisheries**: Initial fisheries work focused on Northern European and North American fisheries, but certifications, ratings, and improvement projects are now global in reach.
- **Seafood production:** from content with a predominantly wild-capture focus to expansion to the aquaculture sector; from primarily engaging industrial fisheries to include consideration of small-scale fisheries efforts.
- **Supply chain expansion:** At this stage, every node in the seafood supply chain is engaged at some level, though this isn't universal to all supply chains for all commodities. The expansion reflects an evolution from an early focus on informing and mobilizing consumers (1) to retailers/buyers (2) to engagement across the entire supply chain, including producers, distributors, wholesalers (3). In aquaculture, it also includes expansion from farms to plants. An increase in the number of industry-led initiatives, such as precompetitive platforms and commitments (e.g., ISSF, Sustainable Seafood Coalition in the UK) is another type of supply chain expansion.
- **Stakeholder diversification** includes growth in industry engagement and efforts led by NGOs based outside the US, as well as non-environmental NGOs engaged in social responsibility of seafood. This also includes the rise of interest from the finance sector, with at least 5 impact investing funds launching between 2016-2019.
- **More systems-level approaches to change** that recognize the interconnectedness of human-ecological systems, such as precompetitive platforms engaging in cross-cutting initiatives that address overfishing, IUU fishing, human well-being, traceability and transparency, and certification benchmarking.
- **National and international policy wins**: Import control rules in the US and Japan and ratification of the PSMA all progressed with the support of seafood markets organizations and efforts.

This expansion occurred within a relatively narrow but consistent portion (5%) of marine philanthropic funding dedicated to the sustainable seafood sector. Philanthropic funding for seafood-based work grew from $25 million to $48 million from 2010 to 2020.

Markets-based approaches to seafood transformation will undoubtedly benefit from this continued expansion of strategies and innovations, which hold potential to drive more equitable, sustainable, and responsible seafood production and trade.