Progress Toward Sustainable Seafood – *By the Numbers*

September 2022 Edition

CEA CONSULTING

WALTON FAMILY FOUNDATION

the David & Lucile Packard FOUNDATION

Table of Contents

Glossary of Terms

Term	Description
AIP	Aquaculture improvement project
AIS	Automatic identification system
ASC	Aquaculture Stewardship Council
BAP	Best Aquaculture Practices
DWF	Distant water fishing
EEZ	Exclusive economic zone
ENGO	Environmental nongovernmental organization
FAO	Food and Agriculture Organization
FIP	Fishery improvement project
FMI	Fisheries Management Index
GDST	Global Dialogue on Seafood Traceability
GFI	Global Fishing Index
GFW	Global Fishing Watch
GHG	Greenhouse gas
GSA	Global Seafood Alliance
GSSI	Global Sustainable Seafood Initiative
GTA	Global Tuna Alliance
ISSF	International Seafood Sustainability Foundation
IUU	Illegal, unreported, and unregulated
Mmt	Million metric tonnes
MSC	Marine Stewardship Council

Term	Description
NOAA	National Oceanic and Atmospheric Administration
NGO	Nongovernmental organization
ODP	Ocean Disclosure Project
OECD	Organisation for Economic Co-operation and Development
OPAGAC	Organización de Productores Asociados de Grandes Atuneros Congeladores
PSMA	Agreement on Port State Measures
RCP	Representative concentration pathway
RFMO	Regional Fishery Management Organization
SEA Alliance	Seafood Ethics Action Alliance
SeaBOS	Seafood Business for Ocean Stewardship
SFP	Sustainable Fisheries Partnership
SIMP	Seafood Import Monitoring Program
SOFIA	State of World Fisheries and Aquaculture
SRA	Social Responsibility Assessment
SSF	Small-scale fisheries
SSI	Sustainable Seafood Index
UN	United Nations
WBA	World Benchmarking Alliance
WTO	World Trade Organization
WWF	World Wildlife Fund

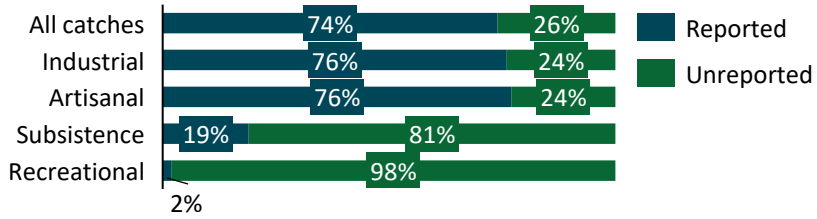
Executive Summary: The State of the Global Ocean and Production

Global marine capture landings remain relatively stable, according to FAO landings data, with the number of underfished stocks steadily decreasing since the mid-1970s. An estimated 65% of stocks are within biologically sustainable levels, although it is difficult to accurately account for IUU catch. IUU catch reconstructions suggest that global landings are in fact 25% higher than levels reported by FAO, contributing to economic losses as high as $50 billion. An estimated 20% to 40% of stocks are now overexploited or collapsed.

Stock assessment data is available for only half of global marine fish catch, and almost 50% of stocks remain below biomass targets. Stock biomass tends to be greater and fishing pressure tends to be lower for stocks that are assessed and for stocks located in higher-income countries with stronger capacity for effective fisheries management (e.g., evidence-based fisheries management, enforcement).

Climate change will contribute to the shifting of 45% of stocks globally by 2100. Adaptive fisheries management is needed to offset the negative effects of climate change, which include decreased fisheries yields and profitability, and which jeopardize food security and fisheries-related employment.

Unreported catches as a percentage of all catches[1]



Source: Planet Tracker, "Do You IUU? An Actionable Toolkit to Assess the Risk of Illegal, Unreported, Unregulated (IUU) Fishing in Investors' Portfolios," 2021.

Recently, the US and EU have lagged in making improvements to federally managed fisheries. In the US, 20% of stocks are considered overfished, down from 28% in 2006 but up from a low of 15% in 2017. Yet just 8% of stocks designated as federally important are subject to overfishing, down from 26% in 2006, when the Magnuson-Stevens Act was reauthorized. In the EU, close to 40% of stocks remain overfished, although this has decreased from around 75% a decade ago. The Mediterranean and Black seas remain poorly assessed and overfished.

Asia, led by China, leads in wild-capture and aquaculture production. Asia accounts for 51% of global wild-caught production, with China accounting for 15%, nearly identical to 2017. Total aquaculture production continues to surpass total wild-capture production, with China as the leading aquaculture producer globally—producing 58% of the world's aquaculture—and the rest of Asia making up most of the remainder.

Distant water fishing (DWF) continues to trend upward, with China, Taiwan, Japan, South Korea, and Spain representing 90% of DWF operations and spending billions in subsidies. Most harmful fishing subsidies are aimed at enhancing the fishing capacity of a vessel, which makes long-distance fishing economically viable and can contribute to overcapacity and overfishing. The World Trade Organization Agreement on Fisheries Subsidies was adopted in 2022 and could mark a major step forward by prohibiting harmful fisheries subsidies.

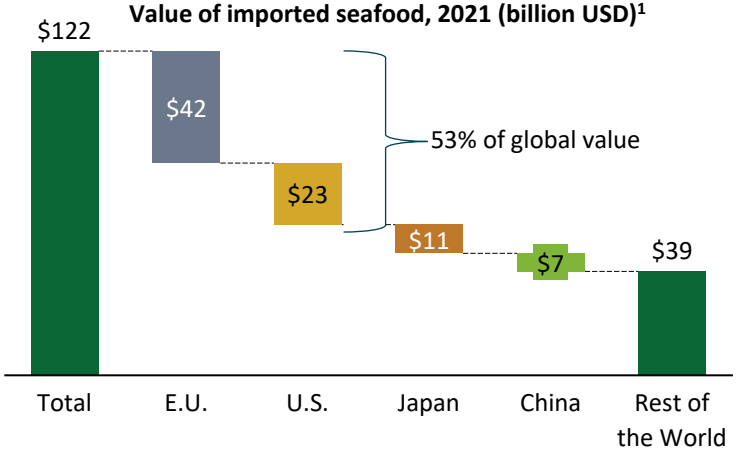
It has been difficult for markets-based initiatives to improve the sustainability of small-scale fisheries. These fisheries contribute to 40% of total global fisheries catch and engage 60 million people in part- or full-time employment and another 53 million in subsistence fishing.

Executive Summary: Consumption, Trade, and Initiatives to Combat Illegal, Unreported, and Unregulated (IUU) Fishing

The COVID-19 pandemic caused significant disruption to the global seafood market and spurred adaptations in business strategy and practices across the seafood industry. Seafood consumption patterns also changed; in the US, per capita seafood consumption fell slightly from 2019 to 2020, but shrimp and canned tuna consumption increased. China remains the top seafood consumer globally in terms of absolute volume, with five times higher total seafood consumption than the next largest consumers, India and Indonesia.

The quantity of globally traded seafood continues to grow. Asian seafood exports to North America remain the largest flow of seafood traded globally. The US and EU—markets with a strong demand for sustainable seafood—remain the highest-value importers of seafood, accounting for over half of the global imported value. China's imports represent only 5.5% of global import value.

Value of imported seafood, 2021 (billion USD)[1]



Source: Trademap.org. 2. As of end of 2021. EU IUU Fishing Coalition, "Map of EU Carding Decisions," 2022.

Globally, 71 countries have committed to the Port State Measures Agreement to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, up from 66 countries in 2020. This is the first legally binding international agreement targeting IUU fishing. It was adopted in 2009 and entered into force in 2016. Yet global alignment on national import control schemes still requires strengthening to effectively deter IUU fishing.

Leading regional and national import control schemes to combat IUU include the EU Anti-IUU Regulation and the US Seafood Import Monitoring Program. In 2020, Japan passed the Improvement of Domestic Trade of Specific Marine Animals and Plants Act to prevent IUU-sourced seafood from entering the Japanese market.

Active EU Red and Yellow Cards[2]

Country	Card
Cambodia	Red
Comoros	Red
St. Vincent and Grenadines	Red
Ecuador	Yellow
Sierra Leone	Yellow
St. Kitts and Nevis	Yellow
Trinidad and Tobago	Yellow
Vietnam	Yellow

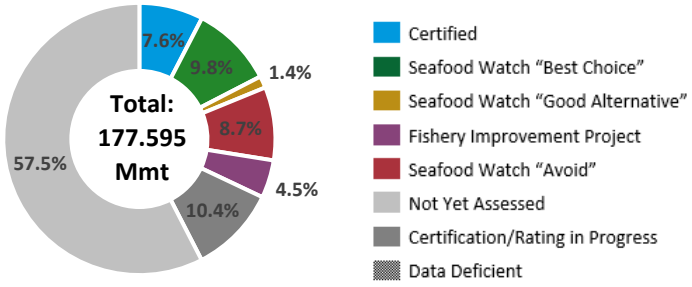
NGO and for-profit traceability and transparency initiatives aim to combat IUU fishing and bring accountability to global seafood supply chains. More than 36% of seafood globally is mislabeled, which is a health, economic, and conservation problem. The Ocean Disclosure Project, an online reporting platform where companies disclose their seafood sourcing and report on other sustainability metrics, grew from 27 industry participants in seven countries in 2020 to 45 industry participants in 10 countries in in 2022. GFW's public map tracks the world's largest fishing vessels, with 10 countries committed to publicly sharing their vessel tracking data. Other platforms exist to track seafood sourcing and vessel activity to help combat IUU fishing.

Executive Summary: Certifications, Ratings & Improvement Efforts, Industry Leadership, and Social Responsibility

About 17% of global production, excluding aquatic plants, is certified (MSC, ASC, or BAP) or rated Monterey Bay Aquarium Seafood Watch "Best Choice," according to the Certification and Ratings Collaboration. In addition, 6% is in a FIP or Seafood Watch "Good Alternative"; 66% is Seafood Watch "Avoid," unassessed, or in assessment; and the remaining 11% is data deficient, which currently precludes assigning a certification or rating to this production. Of wild-caught production, almost 21% is certified, Seafood Watch "Best Choice" or "Good Alternative," or in a FIP.

The US and Peru, followed by Russia, report the highest engagement in FIPs and MSC by volume, largely through whitefish, salmon, and anchoveta fisheries. Suspended fisheries, such as small pelagics, are causing new decreases in MSC's certified volume. Eleven FIPs completed their objectives or moved into MSC full assessment since 2019 and, as of the end of 2021, there were 153 active FIPs. According to new research, crab and lobster FIPs report the highest amount of policy outcomes, and shrimp results in higher practice outputs. BAP and ASC continue to grow their certifications, which represent almost 5% of global farmed seafood production, excluding aquatic plants, up from almost 3% in 2020.

Global Seafood Production (Excluding Aquatic Plants)[1]



Source: Certification and Ratings Sustainable Seafood Data Tool, 2021.

The sustainable seafood commitment landscape in North America and Europe looks roughly the same as five years ago, with most top retailers partnered with Conservation Alliance for Seafood Solutions NGOs. Major contract catering companies have made new commitments to sourcing sustainable seafood since 2020. However, there were no new commitments among the top North American and European retailers, fast food chains, major casual dining restaurants, distributors, hospitality companies, or pet food companies. The World Benchmarking Alliance's 2021 Seafood Stewardship Index found that most of the 30 largest seafood companies are making progress on sustainability commitments, but overall performance remains low, especially as it relates to protecting human rights in supply chains.

Almost 400 companies—primarily retailers, suppliers, and producers—engage in 16 sustainable seafood precompetitive collaborations, up from 250 companies in 12 platforms in 2018. Among member companies, 76% are in North America and Europe, and most platforms are funded by both philanthropic and industry financial support. It is difficult for the seafood community to assess the quality of these collaborative engagements and to understand what progress they are making, due to differences in commitments covered and public reporting, for example.

Drivers and initiatives to address social responsibility in the seafood sector vary significantly. Key international instruments like the UN Guiding Principles on Business and Human Rights outline expectations for businesses. A broad range of actors are engaging in this space, including human and labor rights NGOs, precompetitive collaborations, FIP implementers, funders, and eNGOs. Currently, 30 FIPs are Early Adopters of the new FisheryProgress Human Rights and Social Responsibility Policy, which was launched in 2021. A variety of frameworks, tools, certifications, and voluntary labor standards help to guide the space.

Overview of the Seafood Metrics Report

PURPOSE

- Continue consistent tracking effort to monitor the impact of sustainable seafood initiatives on the global seafood market
- Update and build upon previous reports (2008, 2010, 2013, 2015, 2017, and 2020)
- Aggregate and provide all readily available data on sustainable seafood efforts and impacts to the community of NGOs, businesses, and funders working on seafood and fisheries
- Inform strategic iteration and course-corrections of markets-based approaches to addressing issues in the seafood sector

METHODOLOGY

- Simple, quantitative, and replicable
- Included a survey of sustainable seafood community to update existing datasets as well as identify and baseline new relevant datasets
- Conducted a scan of relevant, publicly available data

LIMITATIONS

- Difficult to attribute direct cause-and-effect relationships given the market orientation of tools
- Quality, timeliness, and availability of data
- Limited time series data in some cases

Note: Jesse Marsh, Principal and Manager at Scaling Blue, LLC, was an expert reviewer of the 2022 report.

Overview of the Seafood Metrics Report

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.

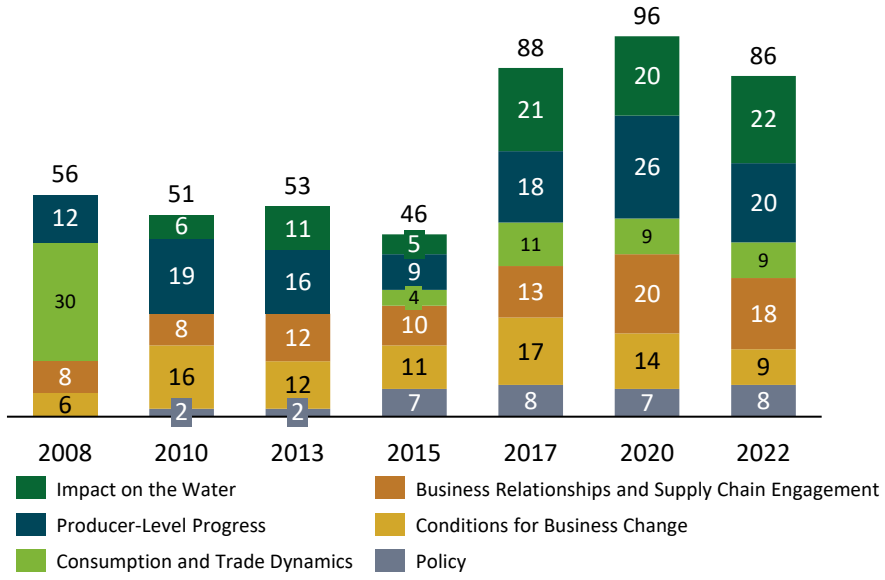
High-Level Themes

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.

IMPACT ON THE WATER

Key takeaways

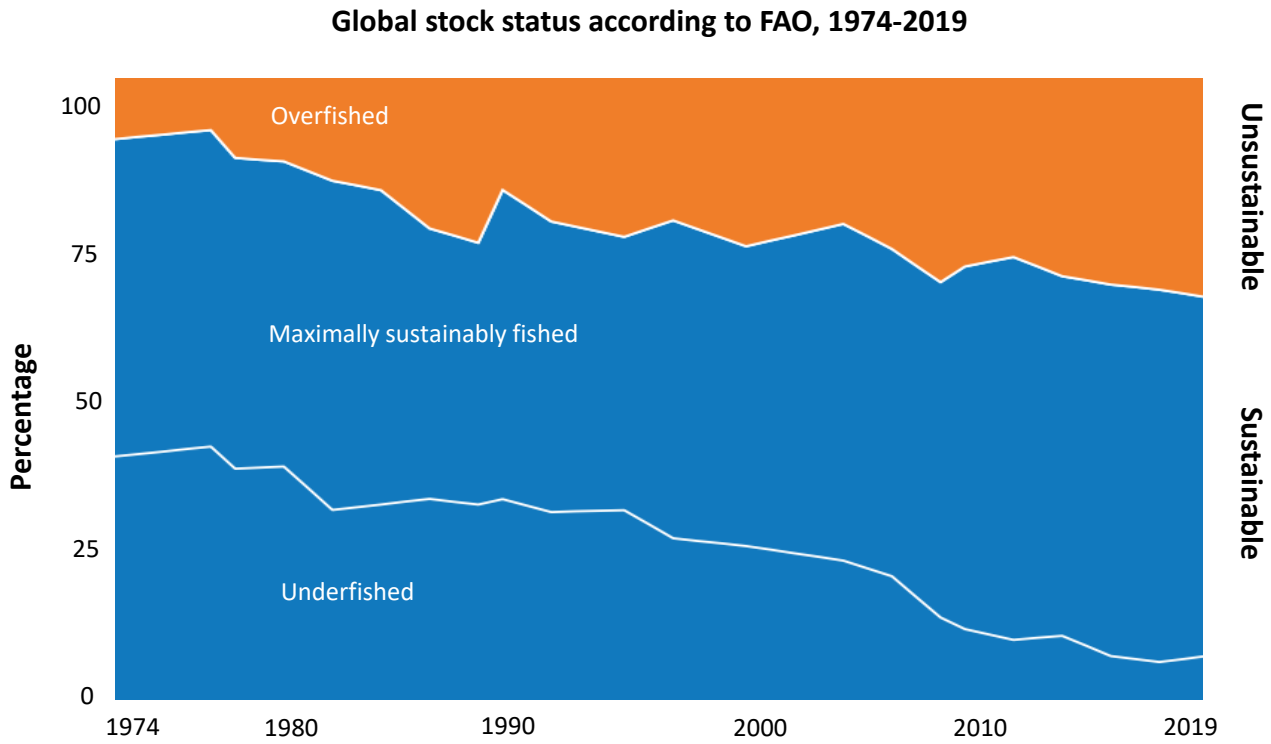
- Assessments of global stock status remain varied; an estimated 20% to 35% of global stocks are fished at unsustainable levels or have collapsed. IUU fishing likely contributes to more than 25% of global landings, according to recent catch reconstruction estimates, causing economic losses of $26-$50 billion annually.
- The US and EU recently slowed improvements to nationally managed fisheries, although substantial progress has been made. In the US, 20% of fisheries are overfished, up from a low of 15% in 2017. The proportion of overexploited stocks has decreased in the EU from around 75% to close to 40% over the past 10 years, although the Mediterranean and Back seas remain poorly assessed and overfished.
- In some countries, fishing subsidies account for almost 50% of foreign catch value, highlighting that most high-seas fishing would not be economically viable without government subsidies. China, Taiwan, Japan, South Korea, and Spain represent 90% of DWF operations, primarily fishing in three regions: the Pacific, East Africa, and West Africa.
- New estimates suggest that by 2100, 45% of stocks will have shifted globally and 81% of EEZ waters will have at least one shifting stock as a result of climate change, leading to reductions in fisheries yields, profitability, and food security, especially in sub-Saharan Africa and small island states.
- Asia accounts for half of global wild-caught production, led by Chinese production. Asia is also the leading producer of aquaculture and mariculture.

METRICS INCLUDED:

Global status and trends in fishery health and exploitation

The 2022 State of World Fisheries and Aquaculture: in 2019, 65% of fishery stocks were within biologically sustainable levels

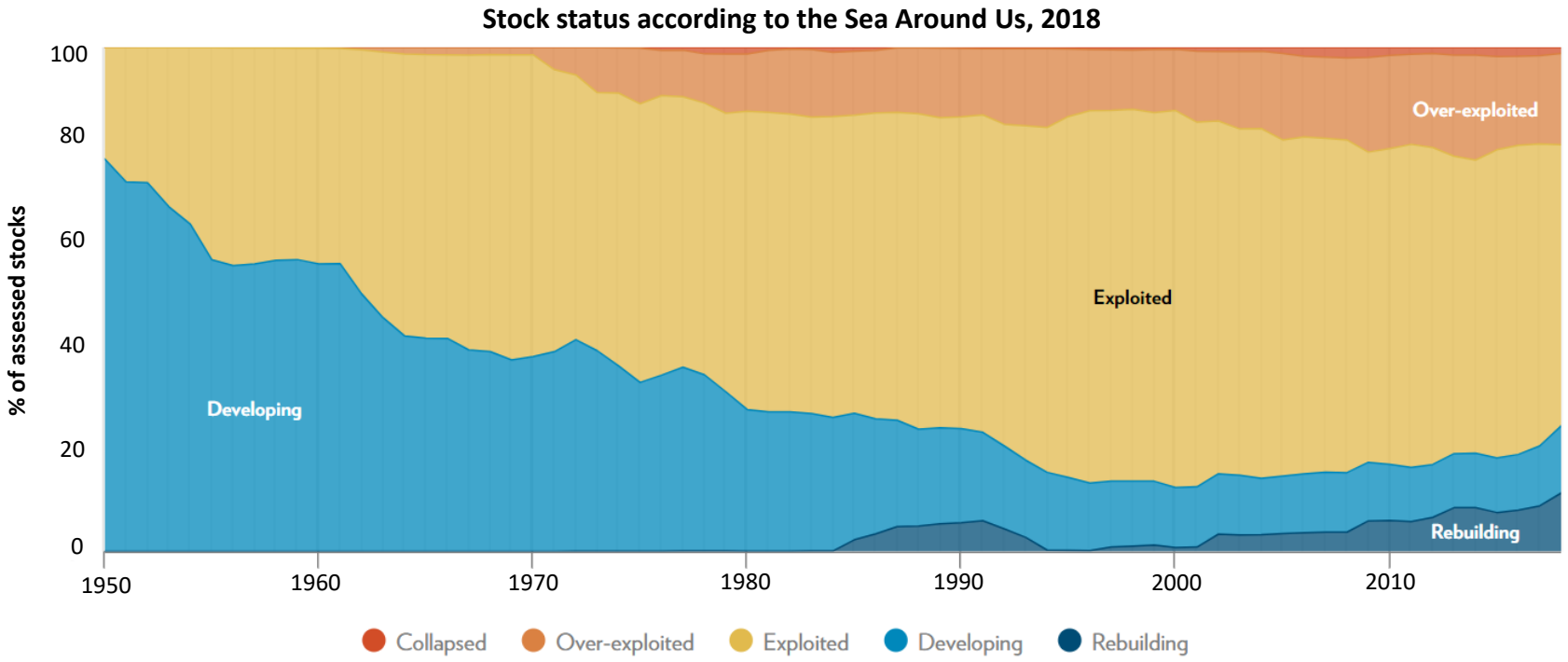
While the 2022 FAO State of World Fisheries and Aquaculture report suggests that the number of landings from biologically unsustainable stocks has increased, the fraction of fishery stocks within biologically sustainable levels was relatively stable between 2017 and 2019, at 65.8% and 64.6%, respectively. The number of underfished stocks has steadily decreased since 1974, representing just 7.2% of all assessed stocks in 2019. Geographically, the Southeast Pacific, Mediterranean and Black Sea, and Southwest Atlantic had the highest percentage of stocks fished at unsustainable levels, at 66.7%, 63.4%, and 40%, respectively. Most stocks remain unassessed and present challenges for data collection and monitoring.



Source: FAO, "The State of World Fisheries and Aquaculture 2022," 2022.

Sea Around Us: 20% of stocks may have been overfished or collapsed as of 2018

Pauly et al. (2020) estimate that 20% of stocks were overexploited or collapsed in 2018. The proportion of stocks considered overexploited or collapsed has stayed consistent in recent years. Data from the Sea Around Us indicate that the proportion of stocks undergoing rebuilding has slowly increased since the mid-1990s, from less than 1% in 1994 to nearly 12% in 2018.



Sources: CEA Consulting, "Our Shared Seas: Threats, Unsustainable Fishing and Farming," 2002; adapted from Pauly D. and Zeller D., editors, Sea Around Us Concepts, Design and Data, 2020.

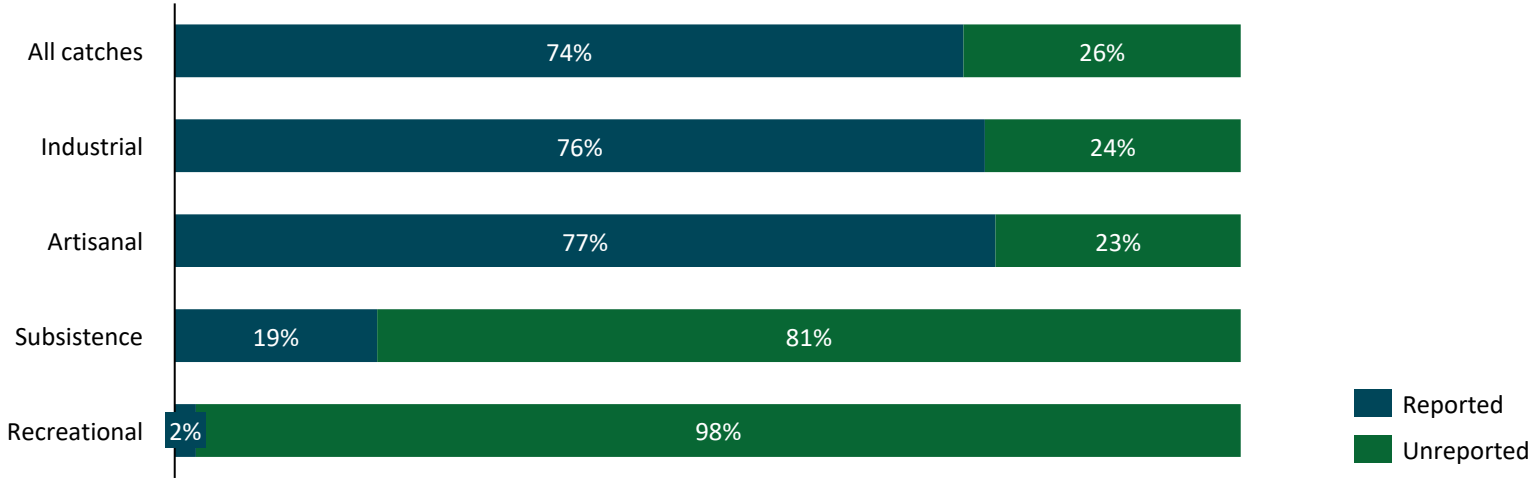
While sources vary, unreported catches likely accounted for 26% of global catches in 2018 and economic losses as high as $50 billion

Due to the opaque nature of illegal fishing, it is challenging to generate consistent estimates of the number of unreported or illegal catches. A 2018 analysis from Sea Around Us estimated the gap between reported data by FAO and total catches (including IUU catches) at 28 million tonnes, about the same as the total reported catches of China, Japan, Russia, the US, and India combined.

Although unreported catches draw from sources that are difficult to trace, it is believed that the vast majority (69%) of unreported catches in absolute tonnage comes from industrial fleets.

Published findings by Sumaila et al. (2020) suggest that IUU traded seafood totals 8-14 Mmt annually, with an associated revenue of $9-$17 billion. Economic losses from IUU fishing are estimated at $26-$50 billion, with losses for individual countries as high as $2-$4 billion.

Unreported catches as a percentage of all catches by fishing operation type, 2018

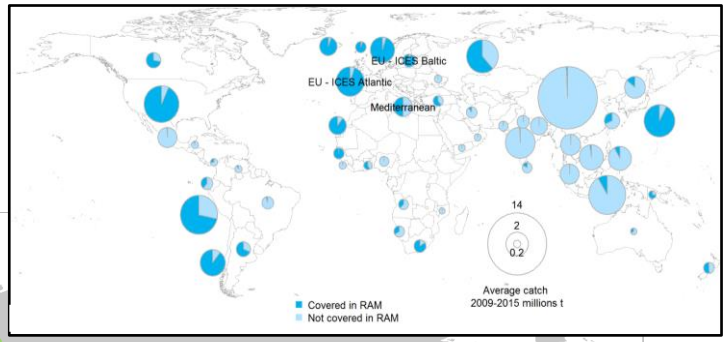


Sources: "Our Shared Seas: Global Ocean Data and Trends for Informed Action and Decision-Making"; U. R. Sumaila et al., "Illicit Trade in Marine Fish Catch and Its Effects on Ecosystems and People Worldwide," *Science Advances* 6, no. 9 (2020); Planet Tracker, "Do You IUU? An Actionable Toolkit to Assess the Risk of Illegal, Unreported, Unregulated (IUU) Fishing in Investors' Portfolios," 2021.

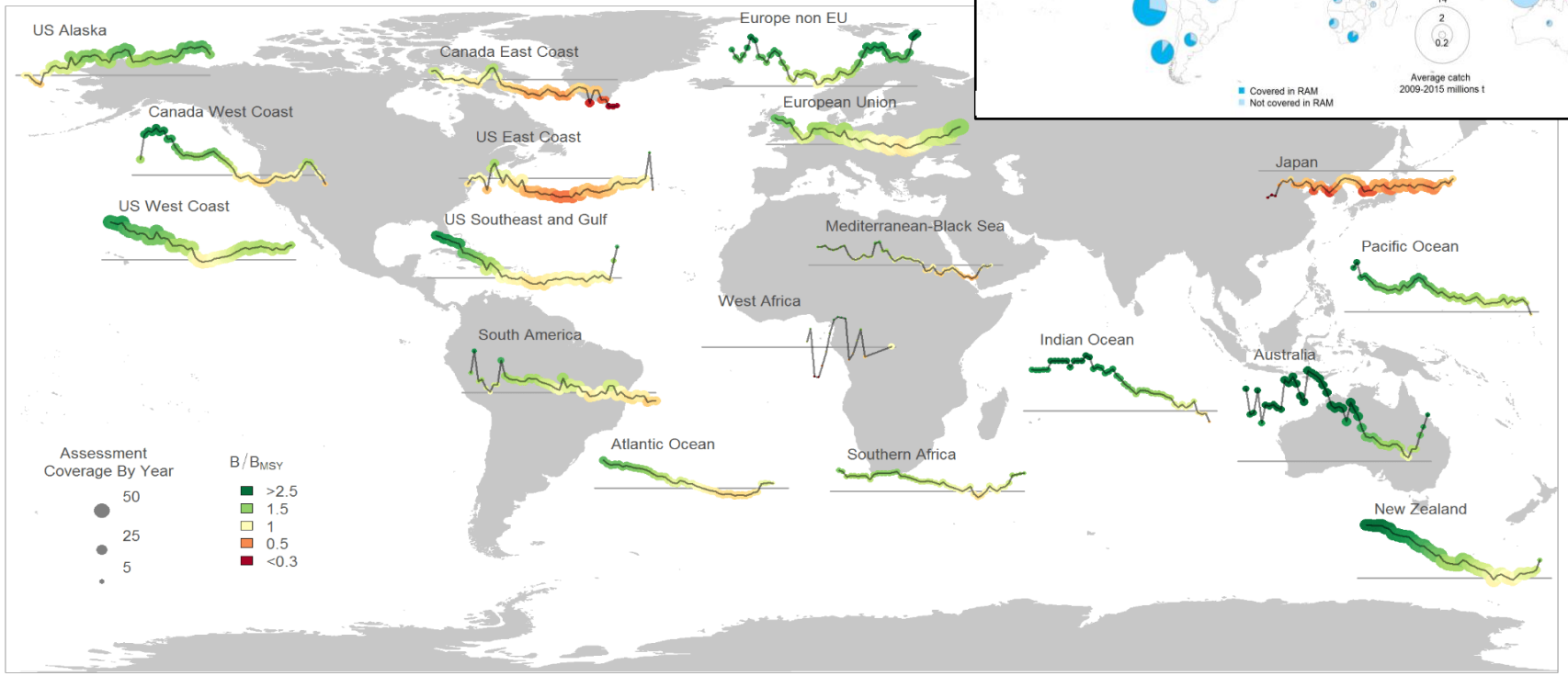
RAM Legacy: Stock biomass is trending upward in parts of the US, EU, and Oceania; assessment coverage in the Global South continues to lag

Despite improving biomass estimates in the Pacific US, Europe, and Oceania, stocks in the Atlantic US and Japan continue to face fishing pressure. Furthermore, knowledge gaps in stock assessments remain. Owing to challenges associated with finding stock data, the RAM Legacy Stock Assessment had a limited set of stock assessments available for sub-Saharan African and Southeastern Asian stocks.

% of catch covered by RAM Legacy



Fish stock biomass



Color and vertical position represent the proportion of the stocks in the region that are overfished. Thickness of lines is proportional to how many stocks are contained in the database.

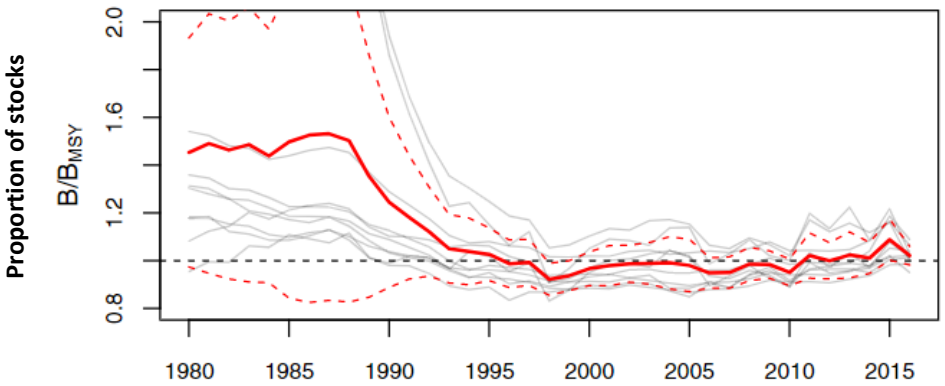
Source: RAM Legacy Stock Assessment Database, 2021.

Stock assessment figures may be overoptimistic in their biomass target projections and may not capture the complexity of global fisheries data

Half of global marine catches are from scientifically assessed stocks, and recent analyses have reported that these stocks have met or exceeded their biomass and recovery targets. In that half, there has been a purported uptick in the biomass of global fish stocks. A 2021 analysis by Britten et al. assesses these conclusions by examining the recovery rates across individual stocks, applying different averaging techniques.

The analysis determined that different metrics produce different trajectories of global fisheries status—four of 10 metrics suggest that recovery has not yet been achieved, with up to 48% of individual stocks remaining below biomass targets and 40% exploited above sustainable rates. Furthermore, recent rates of recovery are near zero, with up to 46% of individual stocks trending downward in biomass targets and 29% of stocks trending upward in exploitation rate. This finding suggests that optimistic stock assessments should be viewed with caution.

Time series data for the proportion of globally averaged biomass relative to the target biomass (B/B_{MSY})



The figure at left gives the time series data for the proportion of globally averaged biomass relative to target biomass, overlain with the ensemble average of all assessed fisheries and 95% interval (red solid and dashed lines, respectively).

Note: B/B_{MSY} refers to biomass relative to the biomass that produces maximum sustainable yield (MSY). U/U_{MSY} refers to fishing mortality rate (U) scaled relative to the level that would achieve MSY.
Source: Gregory L. Britten et al., "Recovery of Assessed Global Fish Stocks Remains Uncertain," *Proceedings of the National Academy of Sciences* 118 (June 2021): 1-3.

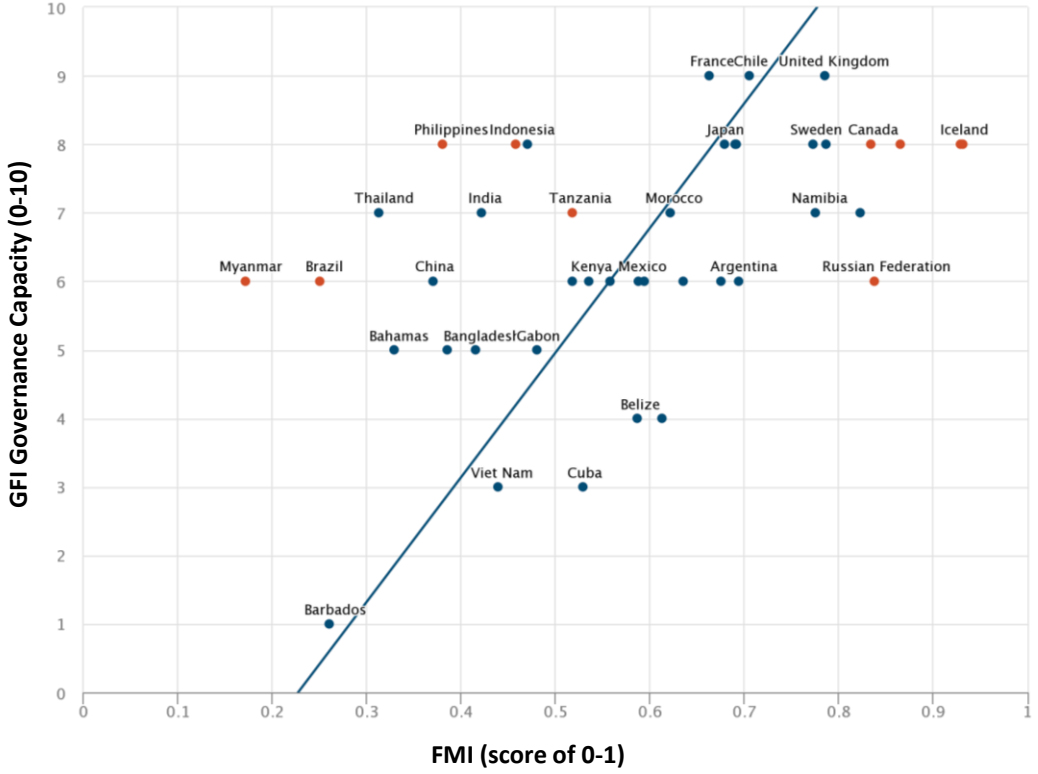
There are several indices to measure the management effectiveness and sustainability of the world's fisheries; variations in methodology lead to different overall assessments of fisheries governance and health

As of 2021, two indices measured the management effectiveness and sustainability of the world's fisheries. The Fisheries Management Index (FMI) draws from expert surveys to examine management effectiveness on a stock-by-stock basis. This analysis found that effectiveness of stock assessments, strength of fishing pressure limits, and comprehensive enforcement programs are the largest determinants of a country's fish stock health.

Released in 2021 by the Minderoo Foundation, the Global Fishing Index (GFI) similarly assesses fisheries governance and sustainability. During GFI's inaugural year, no country earned an A or B grade on fish stock health and local governance systems; six countries received a C, while 20 countries received an F. The Index noted that insufficient fisheries data, a lack of evidence-based fisheries management, and lax law and policy enforcement serve as major barriers to effective science-based fisheries management.

As the graph to the right suggests, variations in the two indices' methodology led to some differences in results. For example, Myanmar, Brazil, and Tanzania scored relatively high on the GFI but received low FMI scores. Conversely, while Indonesia and the Philippines received FMI scores of less than 0.5, the two countries earned the same GFI scores as Iceland, Norway, and Canada, which scored highly on the FMI.

FMI Scores Versus GFI Governance Capacity



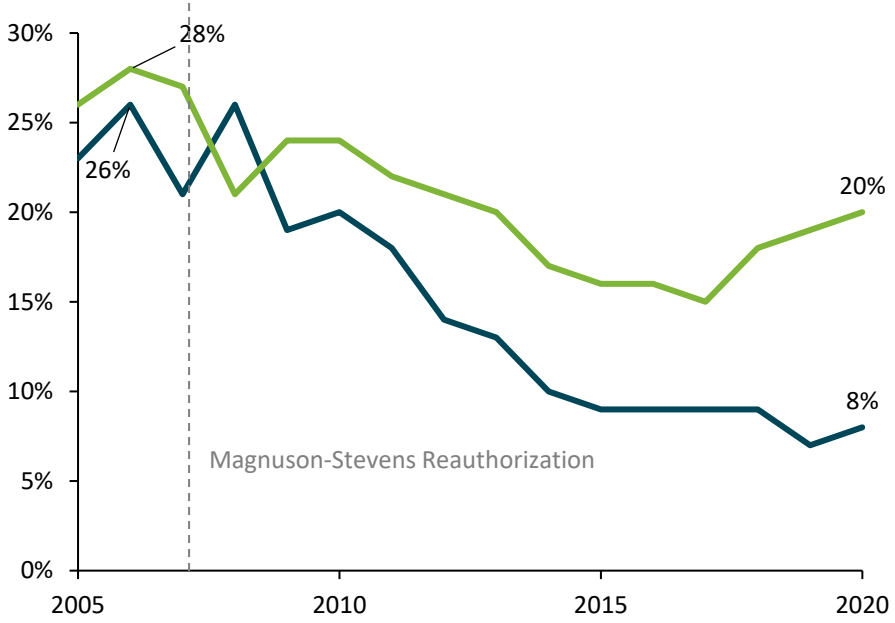
Sources: Michael C. Melnychuk, Emily Peterson, Matthew Elliott, and Ray Hillborn, "Fisheries Management Impacts on Target Species Status," *Proceedings of the National Academy of Sciences* 114, no. 1 (January 3, 2017): 178-83, https://doi.org/10.1073/pnas.1609915114; Minderoo Foundation, "The Global Fishing Index: Assessing the Sustainability of the World's Marine Fisheries" (Perth, Western Australia: 2021), 60.

Since the Magnuson-Stevens Act reauthorization in 2006, the US has more than halved overfishing in federally managed fisheries

Since the 2006 reauthorization of the Magnuson-Stevens Act and subsequent amendments, the US has more than halved overfishing in federally managed fisheries. As of 2021, of the most important federally managed stocks,[1] 8% are subject to overfishing,[2] down from 26% in 2006, though relatively unchanged since 2015. Additionally, 20% were overfished in 2018, down from 28% in 2006, but up from 15% in 2017.

In 2020, one stock was removed from the overfished list and four stocks were added—American Samoa bottomfish, Guam bottomfish, Atlantic herring, and Oceanic whitetip shark—bringing the total to 49 stocks, up from 38 stocks in 2018 and 46 in 2019. For the list of stocks subject to overfishing, four stocks were removed and eight stocks were added, bringing the total to 26 stocks, up from 22 in 2018.

Percentage of US fisheries stocks with known status that are overfished or subject to overfishing



[1] The "most important stocks" designation is based on the Fish Stock Sustainability Index, a set of ~200 US fish stocks selected for their importance to commercial and recreational fisheries. Note that the information in this graph is based only on assessed, federally managed fisheries.

[2] "Overfished" refers to the state of the stock (i.e., biomass), while "overfishing" refers to whether catch is occurring at a sustainable level (i.e., fishing pressure/mortality).

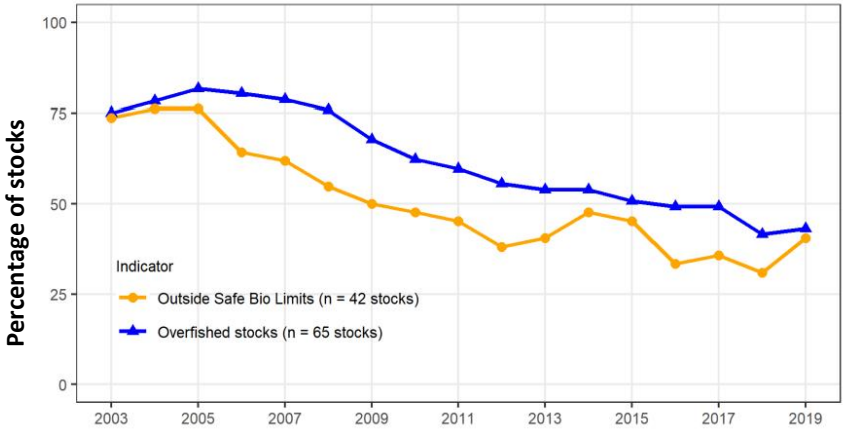
Sources: NOAA, 2021; NOAA, 2018; NOAA, 2016; NOAA, 2015; NOAA, 2014; NOAA, 2013; and equivalent Stock Status Updates dating back to 2000.

While EU stock status has significantly improved since 2003, close to 40% of stocks remain overexploited

Among the EU stocks that have been fully assessed, the proportion of overexploited stocks has decreased from around 75% to close to 40% over the last 10 years. The proportion of stocks outside safe biological limits decreased from 75% in 2003 to around 30% in 2018 but increased substantially in 2019. In 2019, four stocks that were exploited below F_{MSY} were still outside safe biological limits and 23 had an unknown status with regard to safe biological limits. This means that for the last known year, among the 42 stocks considered, only 40% were both not overfished and within safe biological limits.

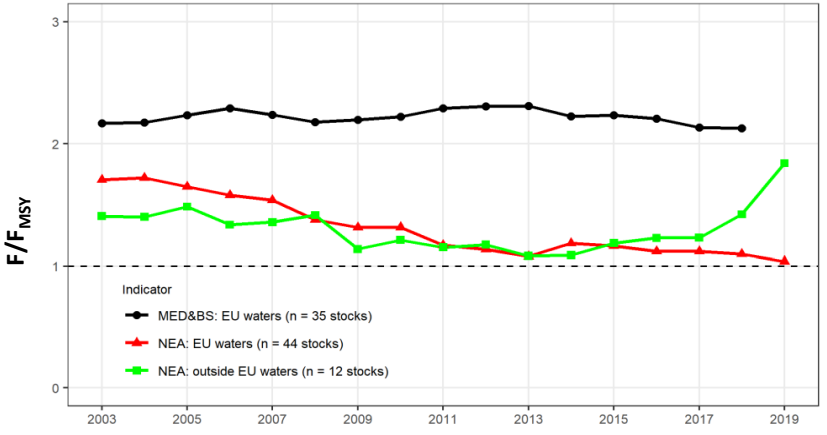
The Mediterranean and Black seas remain poorly assessed and overfished. As of 2018, 83% of stocks in the Mediterranean and Black seas were overfished. Stocks from the Mediterranean and Black seas remain in a very poor situation, although there has been slight improvement in terms of fishing pressure and stock biomass. The European Scientific, Economic, and Technical Committee for Fisheries has raised concerns about the decreasing number of stock assessments being performed and made available in these regions.

Total capture fisheries production trends by area



Trends in stock status in the NE Atlantic (both EU and non-EU waters), 2003-2019. Two indicators are presented. Blue line: the proportion of overexploited stocks (F>FMSY) within the sampling frame (out of a total of 65 stocks). Orange line: the proportion of stocks outside safe biological limits SBL (F>F_{pa} or B<B_{pa}) (out of a total of 42 stocks).

Trends in fishing pressure in the Mediterranean and Black seas, 2003-2019



Three model-based indicators F/F_{MSY} are presented (all referring to the median value of the model): one for 44 stocks with appropriate information in the NE Atlantic EU waters (red line); one for an additional set of 12 stocks also located in the NE Atlantic but outside EU waters (green line), and one for the 35 stocks from the Mediterranean and Black seas (black line).

These statistics refer to the year of last publicly available data, 2013-2019.
Sources: Pinto et al., "Monitoring the Performance of the Common Fisheries Policy," European Scientific, Economic, and Technical Committee for Fisheries, 2021.

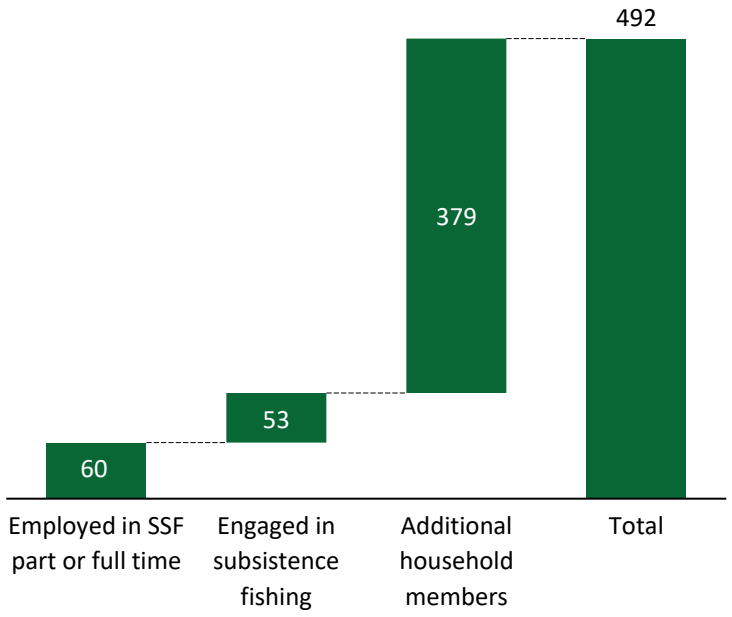
Emerging insights from the forthcoming "Illuminating Hidden Harvests" report show that almost 500 million people depend at least partially on engagement in small-scale fisheries

The forthcoming "Illuminating Hidden Harvests" study will revise and expand upon the 2012 World Bank/FAO/WorldFish publication, "Hidden Harvest: The Global Contribution of Capture Fisheries." It will provide updated and more thorough information on variables such as catch and employment, and will present information on the current and potential nutritional contribution of inland and marine small-scale fisheries (SSF).[1]

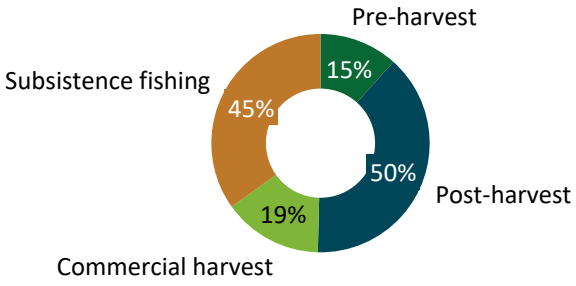
Key initial findings:[2]

- 492 million people depend at least partially on engagement in SSF
- 45 million women participate in SSF
- 40% of global fisheries catch is from SSF (37 million tonnes), of which 68% is marine catch and 32% is inland catch
- The estimated total revenues from first sale of SSF catch are $77 billion, of which $58 billion is from marine SSF catch and $19 billion is from inland SSF catch

Livelihoods and jobs supported at least partially by engagement in SSF (millions)



Women's full- and part-time employment contributions to SSF



Sources: 1. FAO, "Illuminating Hidden Harvests," 2021. 2. FAO, "The Contributions of Small-Scale Fisheries to Sustainable Development: A Snapshot of Findings from the Illuminating Hidden Harvests Report," 2022.

The top 10 providers of harmful fishing subsidies spent more than $5.3 billion on fishing operations outside their own EEZ in 2021

A June 2021 report from Oceana on harmful fishing subsidies estimated that the top 10 providers of harmful fisheries subsidies spent more than $5.3 billion on fishing in waters outside their own EEZ, which accounts for more than one third of the total harmful fisheries subsidy spending. While China is the overall largest provider of harmful fisheries subsidies, at $5.9 billion, South Korea and Taiwan are the largest subsidizers of high seas fishing, at $233 million and $252 million, respectively.

Most "harmful" fishing subsidies are aimed at enhancing the fishing capacity of a vessel, making long-distance fishing economically viable. Lower-income countries depend on these subsidies. These subsidies are considered harmful as they contribute to overcapacity and overfishing.

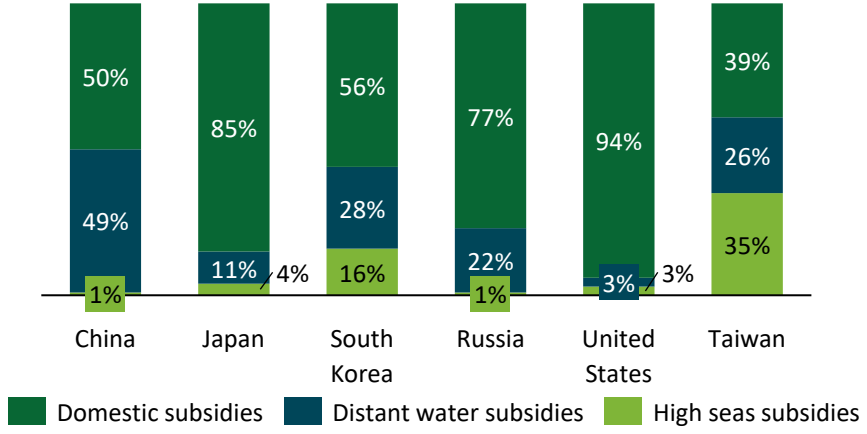
Four of the top five countries that receive DWF subsidies were themselves heavy subsidizers. Other nations caught more fish from Japanese and South Korean waters than those nations' domestic fleets. Indonesia, Russia, Morocco, Malaysia, and Cambodia were among the leading countries with the greatest catch fished from their waters by DWF vessels.

The report also determined that DWF subsidies negatively affect some fisheries in low-income countries; harmful fisheries subsidies supported more than 20% of the foreign catch value. In the top six countries most outspent by the top 10 subsidizers, foreign subsidies accounted for anywhere from 17% to 46% of foreign catch value, demonstrating the financial losses incurred by harmful fishing subsidies.

Top six countries most outspent by the top 10 subsidizers in 2018

Country	Foreign subsidies as a percentage of foreign catch value
Democratic Republic of Congo	46%
Guinea-Bissau	42%
Guinea	35%
Sierra Leone	27%
Somalia	17%
Cambodia	16%

Estimated provision of harmful fisheries subsidies to the three fishing fleet subsectors in 2018



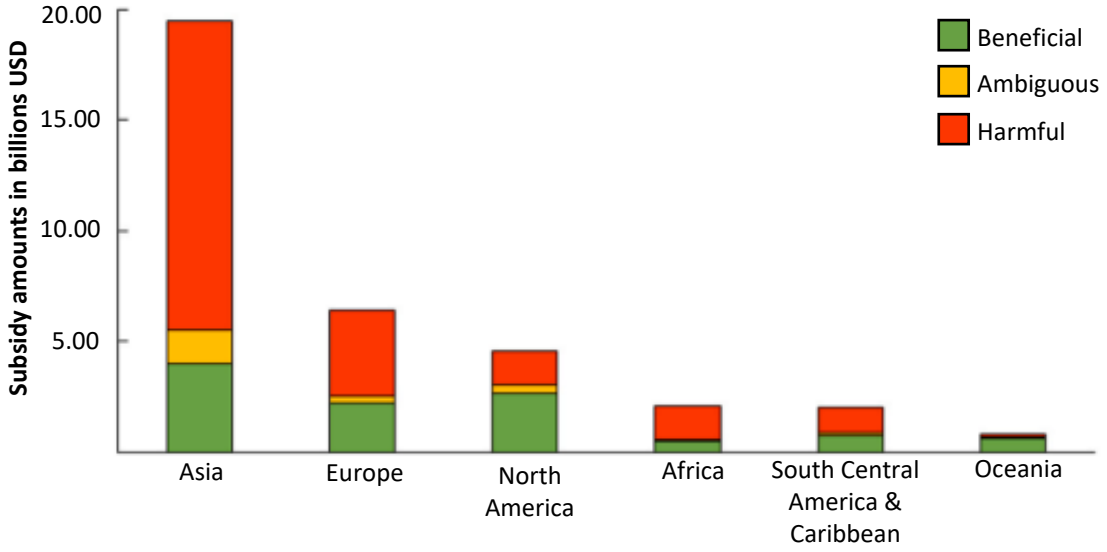
Sources: Daniel J. Skerritt and U. Rashid Sumaila, "Assessing the Spatial Burden of Harmful Fisheries Subsidies," 2021; The Pew Charitable Trusts, "Reducing Harmful Fisheries Subsidies," 2022.

The recent WTO agreement to limit harmful fishing subsidies signals an opportunity to protect overexploited fisheries

In June 2022, the WTO agreed on a deal to ban subsidies for fisheries deemed to be overexploited. Under the deal, WTO members cannot grant or maintain subsidies to vessels or operators engaged in IUU fishing activities. Members are prohibited from offering subsidies for fishing or related activities in the high seas outside the jurisdiction of a relevant RFMO. While the agreement is binding, critics argue that because it does not explicitly name the types of subsidies that are most harmful (i.e., subsidies that lead to overcapacity and overfishing), member countries may be able to circumvent the requirements.

As of 2018, 154 countries provided over $22 billion in harmful fishing subsidies. Asian countries collectively provided the greatest absolute amount of harmful subsidies ($14 billion) in 2018, accounting for 63% of all harmful subsidies provided worldwide. Europe is the second-largest provider of harmful subsidies, collectively funding $4 billion. Wide variation remains at the regional level, with Oceania providing $160 million in harmful subsidies. Subsidy intensity metrics, which consider the amount of harmful subsidies provided as a proportion of the total value of the catch landed, determined that 19% of the total value of Asian catch is provided through harmful subsidies.

Scope and distribution of regional fisheries subsidies, 2021



Sources: Seafood Source, "WTO Deal on Fishing Subsidies Received with Mixture of Praise and Criticism," 2022; Daniel J. Skerritt and U. Rashid Sumaila, "Broadening the Global Debate on Harmful Fisheries Subsidies Through the Use of Subsidy Intensity Metrics," *Marine Policy* 128 (June 2021): 104507.

China, Taiwan, Japan, South Korea, and Spain represent 90% of DWF operations

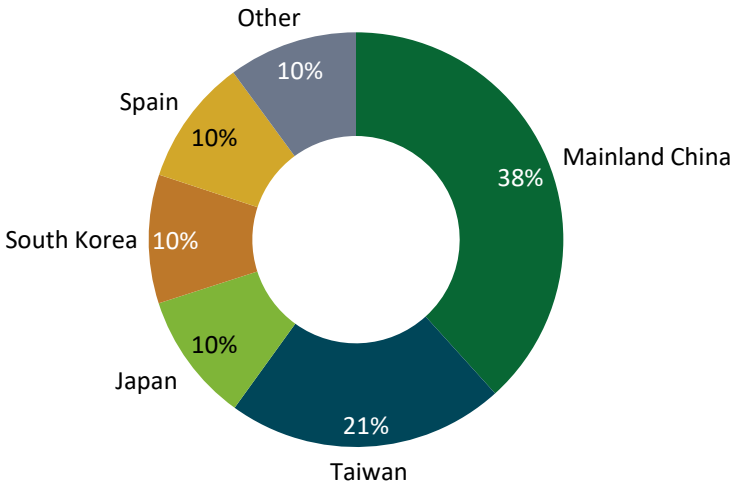
A 2019 joint report by the Stimson Center and GFW determined that mainland China and Taiwan represented 60% of all global DWF efforts in other countries' waters from 2015 to 2017. Japan, South Korea, and Spain each represented another 10% of DWF. Taken together, these five countries account for 90% of DWF operations.

The report further determined that the Pacific, East Africa, and West Africa have the EEZs with the highest DWF. Kiribati, Seychelles, and Guinea-Bissau receive the highest number of DWF vessels in their waters within each of their respective regions.

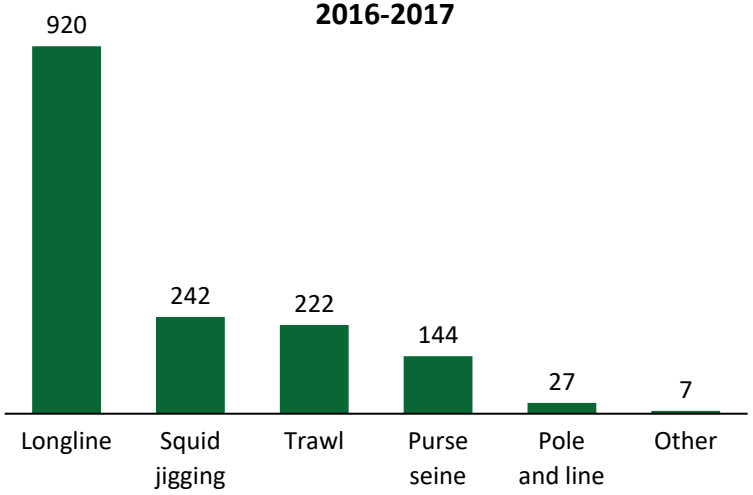
Countries tend to engage in DWF after they have overfished their domestic stocks. Governments with strong economies, such as China, provide subsidies to other countries for Chinese fleets to fish in other EEZs. In 2018 alone, China, the EU, Japan, Korea, and Taiwan spent $1.6 billion in subsidies and expended 2 billion kilowatt hours in other countries' waters.

The top five fleets primarily used four types of fishing gear: longlines, squid jigging, trawling, and purse seining. Over two-thirds of the DWF vessels were either longliners or purse seiners, which traditionally target tuna or tuna-like species.

Proportion of fishing effort by the top 10 DWF fleets



Sum of the top 5 DWF fleets' vessels by fishing gear type, 2016-2017



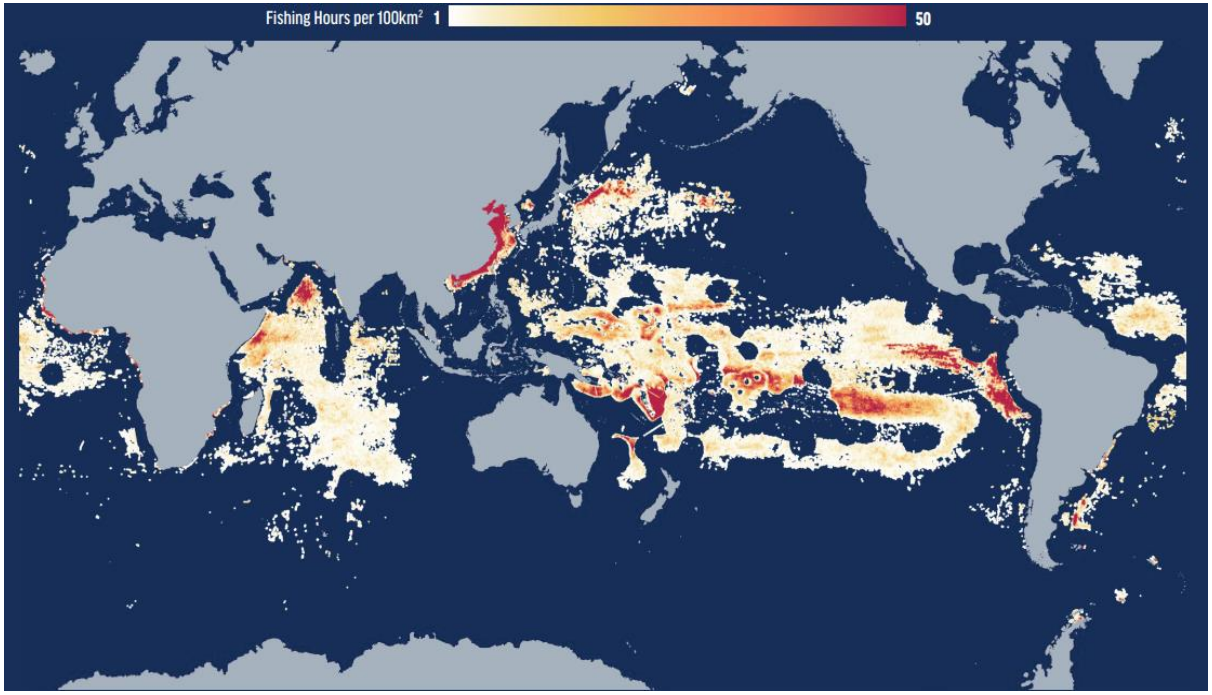
Sources: The Stimson Center, "Shining a Light: The Need for Transparency Across Distant Water Fishing," 2019; Isabel Jarrett and Reyna Gilbert, "New Research Shows the 5 Governments Funding the Most Distant-Water Fishing – and the Harm It Causes," 2021.

China spent close to 10 million hours fishing outside of its EEZ, more than any other country engaged in DWF

In collaboration with GFW, Oceana released an analysis in 2021 determining that more than 51,000 fishing vessels flagged to China fished for more than 47 million hours between 2019 and 2021. This figure accounts for 30% of all recorded high seas fishing activity and 34% of the global fishing activity captured by GFW data over the three-year period.

Chinese fishing vessels spent nearly 10 million hours fishing outside China's EEZ, of which 6.5 million hours were spent fishing on the high seas. In total, China fished in the EEZs of more than 80 other nations for more than 3 million hours.

China's Global Fishing Footprint, 2019-2021[1]



Top 10 Foreign Waters Where China Fished, 2019-2021[1]

	Country	Total DWF fishing hours
1	Vanuatu	384,574
2	South Korea	294,192
3	Solomon Islands	283,857
4	Kiribati	281,361
5	Federated States of Micronesia	259,771
6	New Zealand	242,050
7	Guinea-Bissau	192,803
8	Taiwan	178,243
9	Marshall Islands	147,091
10	Mauritania	137,473

1. Data based solely on vessels flagged to China and broadcasting AIS data.
Source: GFW and Oceana, "China's Global Fishing Footprint," 2021.

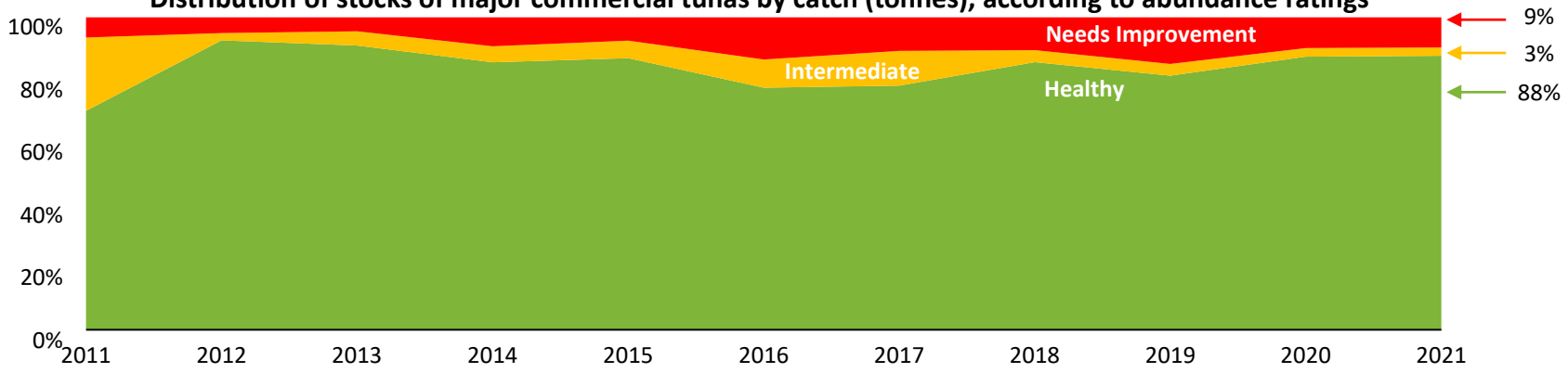
ISSF data show 88% of global tuna catch and 88% of stocks are considered healthy; the 2025 Pledge Towards Sustainable Tuna aims to achieve the highest sustainability of global tuna catch by 2025

According to the International Seafood Sustainability Foundation (ISSF) 2021 "Status of the World Fisheries for Tuna" report, 88% of the stocks are at a healthy level of abundance, 9% are overfished, and 9% are at an intermediate level. This annual report provides summary results of the most recent scientific assessment of the 23 tuna species worldwide. The report found that 74% of the stocks are not experiencing overfishing, while 22% are experiencing overfishing.

In terms of catch, 87.7% of the total catch comes from healthy stocks in terms of abundance. This is because skipjack stocks contribute more than half of the global tuna volume, and all skipjack stocks are considered healthy. In contrast, one bluefin stock, one bigeye stock, and two yellowfin stocks are overfished, resulting in 9.6% of the total catch coming from overfished stocks.

The 2025 Pledge Towards Sustainable Tuna seeks to continue these positive trends by uniting responsible businesses, governments, and NGOs toward the shared goal of ensuring that tuna meets the highest standards of environmental and social responsibility through supply chain improvements and fisheries management by 2025. The Pledge is a joint initiative among Global Tuna Alliance, the NGO Tuna Forum, and Friends of Ocean Action. Signatories to the Pledge are required to make improvements under three main commitments: 1) transparency and traceability, 2) environmental sustainability, and 3) social responsibility.

Distribution of stocks of major commercial tunas by catch (tonnes), according to abundance ratings



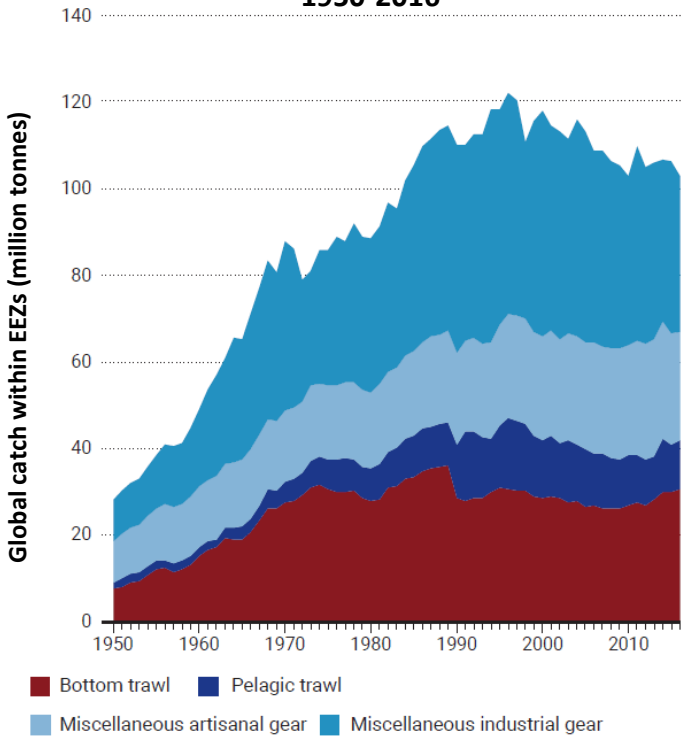
Sources: ISSF, "Status of the World Fisheries for Tuna 2021"; data adapted from https://iss-foundation.org/; Global Tuna Alliance, "2025 Pledge Towards Sustainable Tuna," 2021.

New research highlights the negative environmental, climate, and socio-economic impacts of bottom trawling

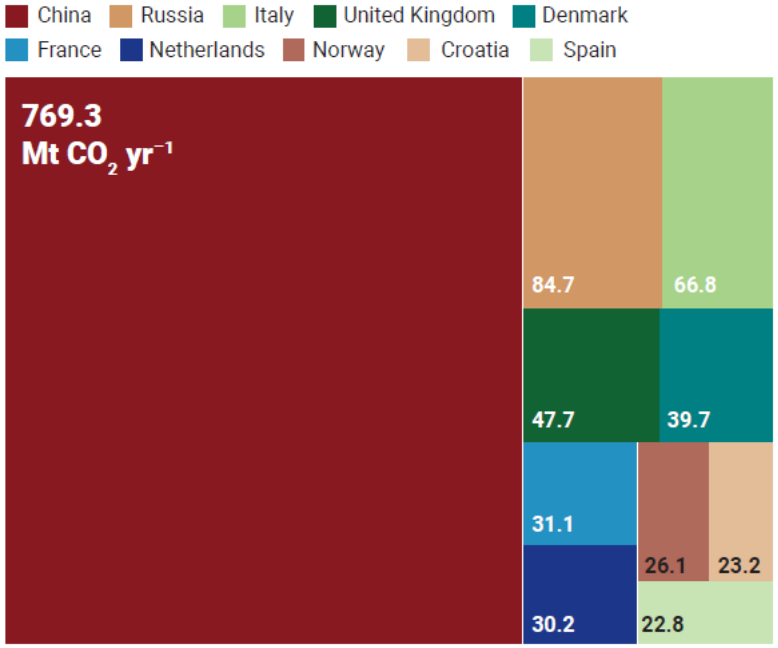
A 2021 report by leading fisheries experts found that more than 99% of bottom trawling worldwide occurs inside the EEZs of coastal nations—with much of the effort focused within just 12 miles of shore—posing risks to critical habitats and traditional, small-scale, artisanal fishing operations.

As the only globally significant fishing practice that requires sustained contact with the seabed, bottom trawling has a uniquely high impact—one that can drive habitat destruction, coastal conflict, and major fuel-related carbon emissions.

Global marine fisheries catch within EEZs by gear type, 1950-2016



Estimated GHG emissions from bottom trawling

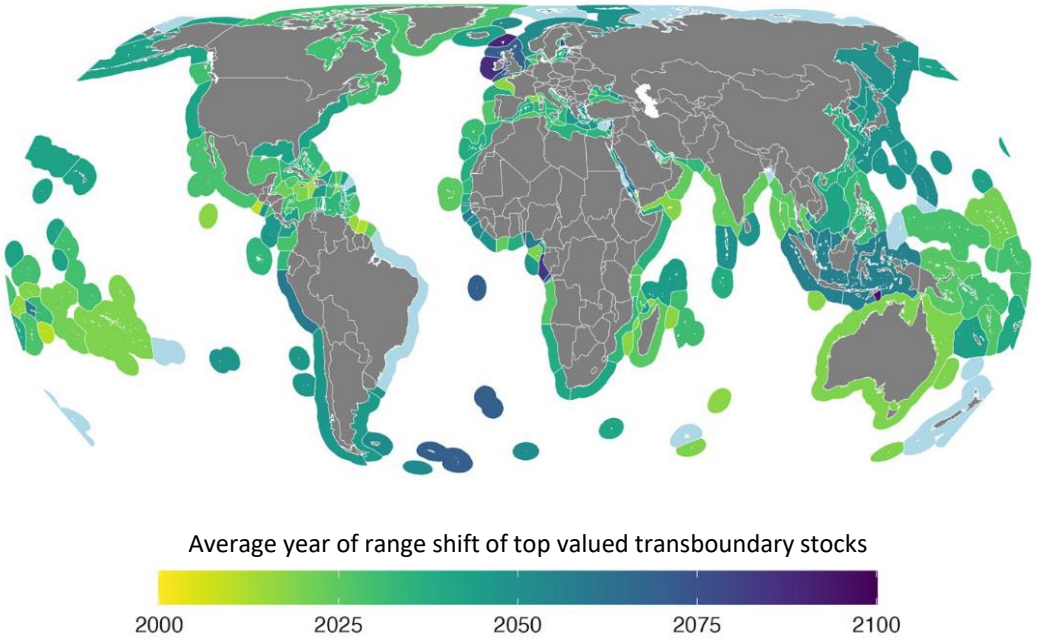


Sources: Steadman et al., "New Perspectives on an Old Fishing Practice: Scale, Context and Impacts of Bottom Trawling," 2021; D. Pauly, D. Zeller, and M.L.D. Palomares, eds., "Sea Around Us Concepts, Design and Data," 2020, seaaroundus.org; Sala et al., "Protecting the Global Ocean for Biodiversity, Food and Climate," 2021.

Fisheries management plans that are not designed to respond to range and abundance shifts will be less resilient to climate change

A 2022 study projects that 45% of stocks will shift globally and 81% of EEZ waters will have at least one shifting stock by the end of 2100 as a result of climate change. By 2030, 85% of the world's EEZs will have experienced changes in catch proportion of transboundary stocks. The study tracked the shifting ranges of 9,132 transboundary fish stocks, which account for 80% of catch taken from the world's EEZs, starting in 2006 and projecting to 2100 under a high GHG emissions scenario. Many countries that are highly dependent on fisheries for livelihoods and food security emerge as hotspots for transboundary shifts. As a result, most tropical stocks, such as those within the EEZs of Latin America, the Caribbean, Melanesia, and Polynesia, are expected to see shifts significantly earlier. Management plans may not be fully prepared for the consequences of shifting transboundary stocks. For example, species' shifts within the Parties to the Nauru Agreement area will likely also have to deal with stocks expanding to new jurisdictions—an issue that the North-East Atlantic Fisheries Commission is currently facing with respect to Atlantic mackerel.

Modeled year of change in distribution of top 5 most valuable transboundary stocks, by country



Lighter colors are indicative of an early shift, while darker colors represent a late shift. EEZs with no distributional shift between 2006 and 2100 are represented in pale blue.

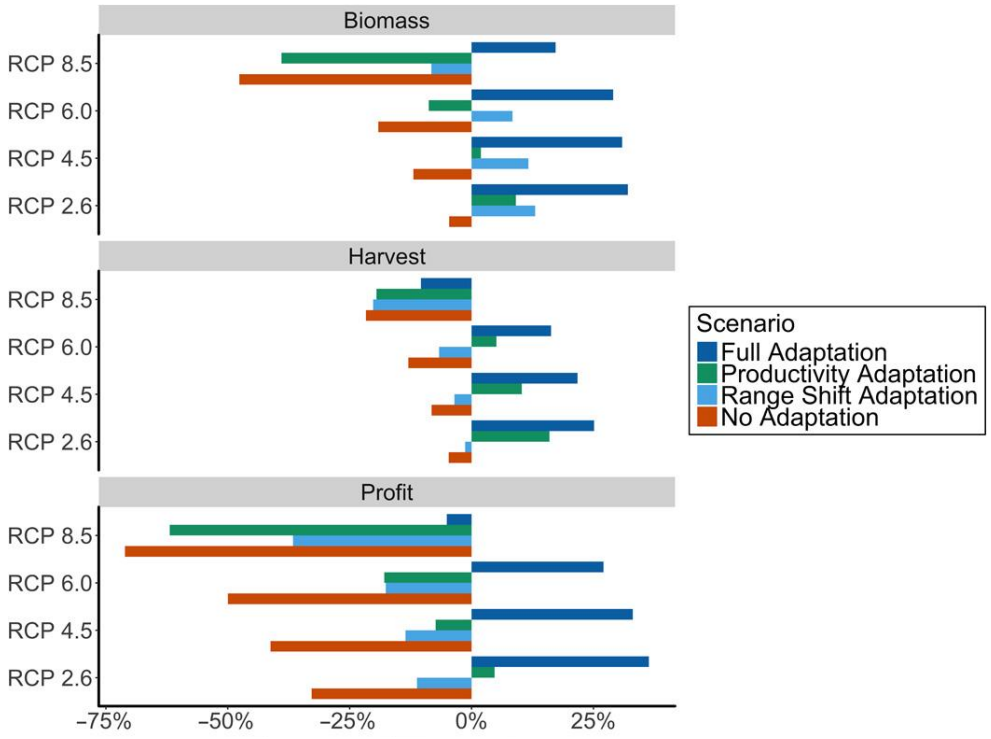
Source: Juliano Palacios-Abrantes et al., "Timing and Magnitude of Climate-Driven Range Shifts in Transboundary Fish Stocks Challenge Their Management," *Global Change Biology* 28 (2022): 2312–2326, doi: 10.1111/gcb.16058.

Adaptive fisheries management, supported by international collaboration, could help offset the negative effects of climate change

In theory, fully adaptive fisheries management could offset the negative effects of climate change but would require dynamic international collaboration. The dynamic nature of climate change makes static tools of fisheries management obsolete and calls for approaches that are climate resilient. Theoretically, a well-implemented and fully adaptive suite of management approaches is projected to result in higher biomass, catch, and profit by 2100 compared to what the ocean currently provides, assuming Representative Concentration Pathways[1] of 2.6, 4.5, and 6.0. By contrast, under the most extreme scenario, RCP 8.5, both profit and harvest decline relative to today even under the most optimistic assumptions about fisheries management reforms. Adopting adaptive fishery management approaches now would lead to substantially higher global profits (154%), harvest (34%), and biomass (60%) compared to a business-as-usual approach under the RCP 6.0 scenario. The authors focus on the moderately high-emissions scenario, RCP 6.0, under which global mean temperature would increase by 2.2°C by 2100.

Many in the NGO, funding, and science communities have begun to work on pilot projects and to better define what climate-smart fisheries management looks like in practice, though important work remains in application.

Percentage difference in biomass, harvest, and profit relative to today across RCP scenarios



Difference: 2100 vs. today

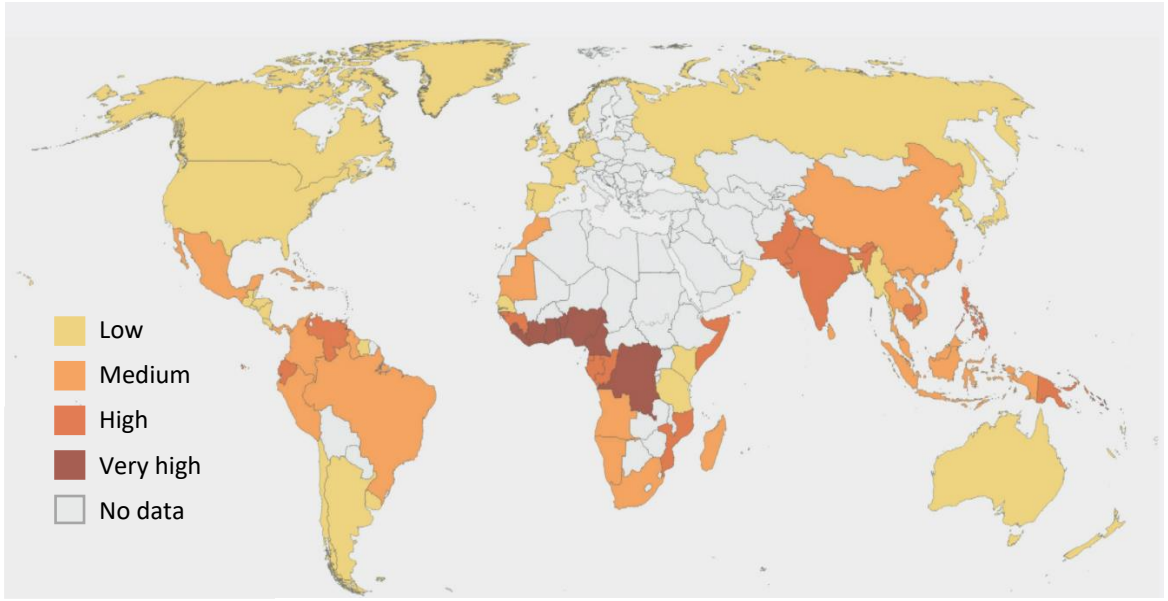
1. Representative Concentration Pathways determine how climate change will likely affect each stock's productivity and spatial range under several future climatic scenarios. The figure above presents four GHG concentration pathways. Global MSY (weighted mean) is expected to change by 1.0, −1.5, −5.0, and −25.0% under RCPs 2.6, 4.5, 6.0, and 8.5, respectively.
Sources: "Our Shared Seas: A Primer for Philanthropy on Ocean-Climate Interventions,"; Steven D. Gaines et al., "Improved Fisheries Management Could Offset Many Negative Effects of Climate Change," *Science Advances* 4, no. 8 (2018): eaao1378.

Tropical coastal regions of sub-Saharan Africa and small island states in the Pacific are most at risk of decreases in fisheries yields and profitability due to climate change

Fisheries yields and profitability will likely decline as a result of climate change, putting food security and fisheries-related employment at risk. Recent modeling efforts suggest that maximum catch and revenue potentials will decrease by 8% and 10%, respectively, by 2050 relative to 2000. The main reasons for these changes include shifts in the distribution range of marine species, changes in primary and secondary productivity, shifts in timing of biological events, and differences in species composition. Tropical marine habitats and fish stocks are particularly vulnerable to the physical and biogeochemical oceanic changes associated with climate change; fisheries yields may decrease by 40% in tropical EEZs by 2050.[1]

FAO's 2020 "State of World Fisheries and Aquaculture" report identified countries at highest risk from projected changes in catch potential due to climate change through scoring risk. The states identified at most risk include Benin, Kiribati, Liberia, Mauritania, Mozambique, Sierra Leone, Solomon Islands, and Togo. Additionally, besides sub-Saharan Africa and the Pacific, Cambodia and Haiti are considered at very high risk of suffering significant negative effects from climate change.[2]

Climate Change Impact on Marine Capture Fisheries and Vulnerability: Risk by Country[2]



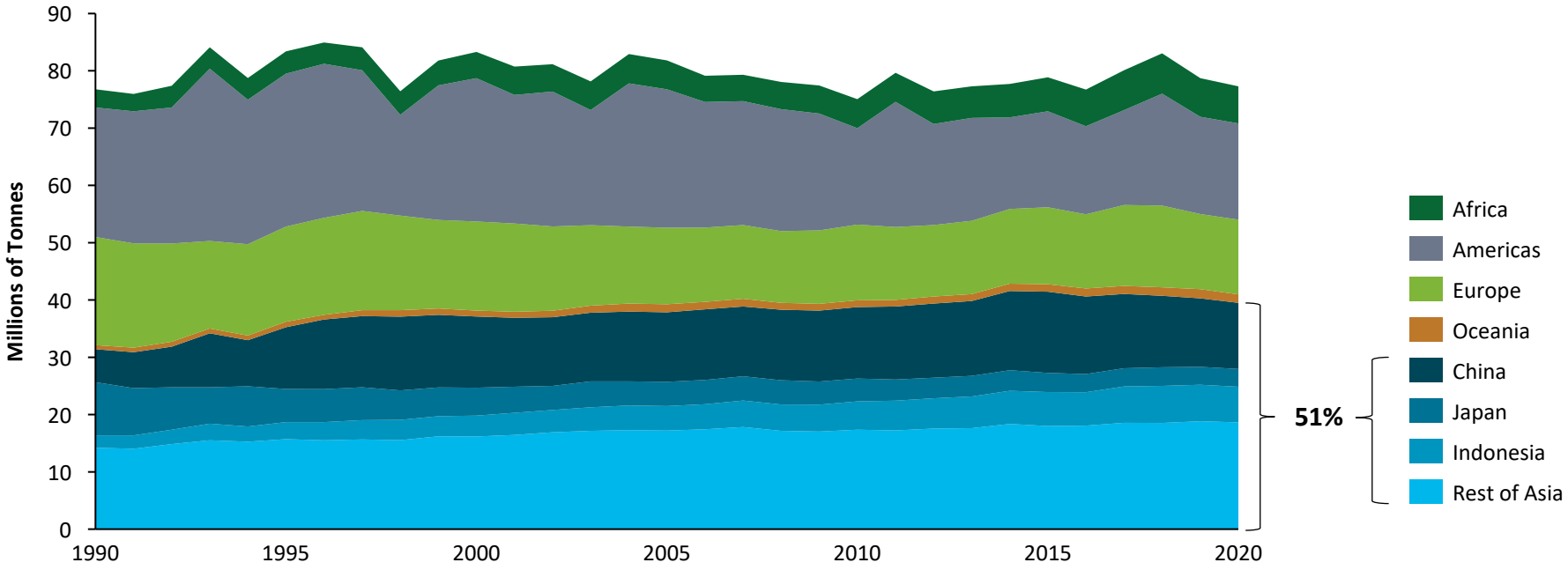
Climate change risk scores were calculated using the following equation: climate change risk = vulnerability (nutritional dependence on marine capture fisheries, economic dependence on marine capture fisheries, development score) + impact on marine capture fisheries.

Sources: 1. "Our Shared Seas: A Primer for Philanthropy on Ocean-Climate Interventions," https://oursharedseas.com/solutions/a-primer-for-philanthropy-on-ocean-climate-interventions/#Adaptation%20Interventions. 2. FAO, "The State of World Fisheries and Aquaculture," 2020, https://www.fao.org/3/ca9229en/ca9229en.pdf.

Asia accounted for 51% of global wild-caught production in 2020; China alone accounted for 15% of the global total

Asia accounts for most of the wild-caught marine seafood globally, led by Chinese production. Though current catch levels in many parts of Asia may be unsustainable, per capita fish consumption in the region is expected to increase, and fishing industries will continue to grow.[1]

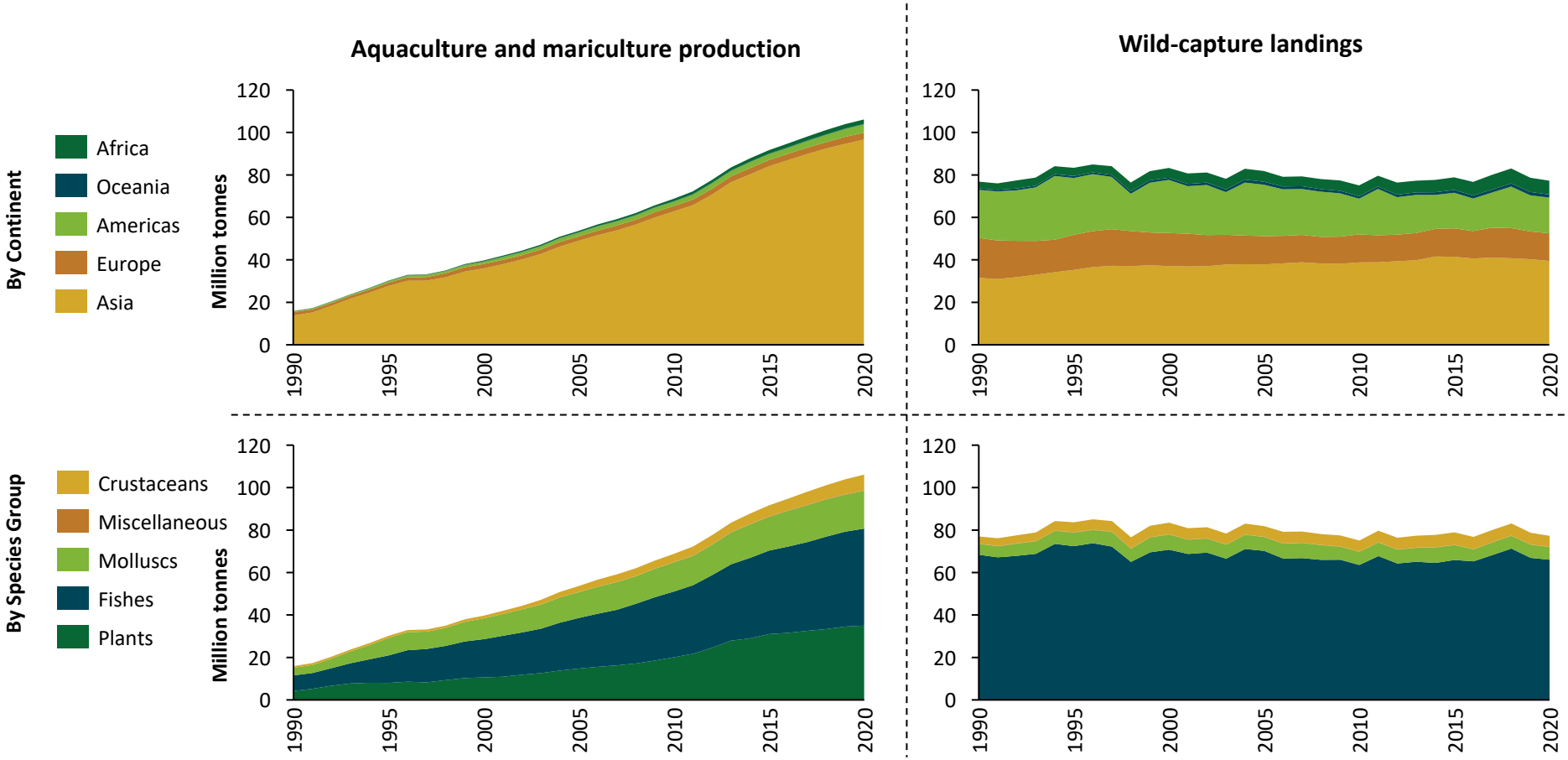
Wild-caught seafood production by continent, 1990-2020[2]



Sources: 1. FAO, "The State of the World Fisheries and Aquaculture," 2017; 2. FishStatJ (freshwater landings and seaweed harvest not included).

CEA CONSULTING

Global aquaculture and mariculture production continues to grow, primarily driven by Asia, outpacing global wild-capture landings

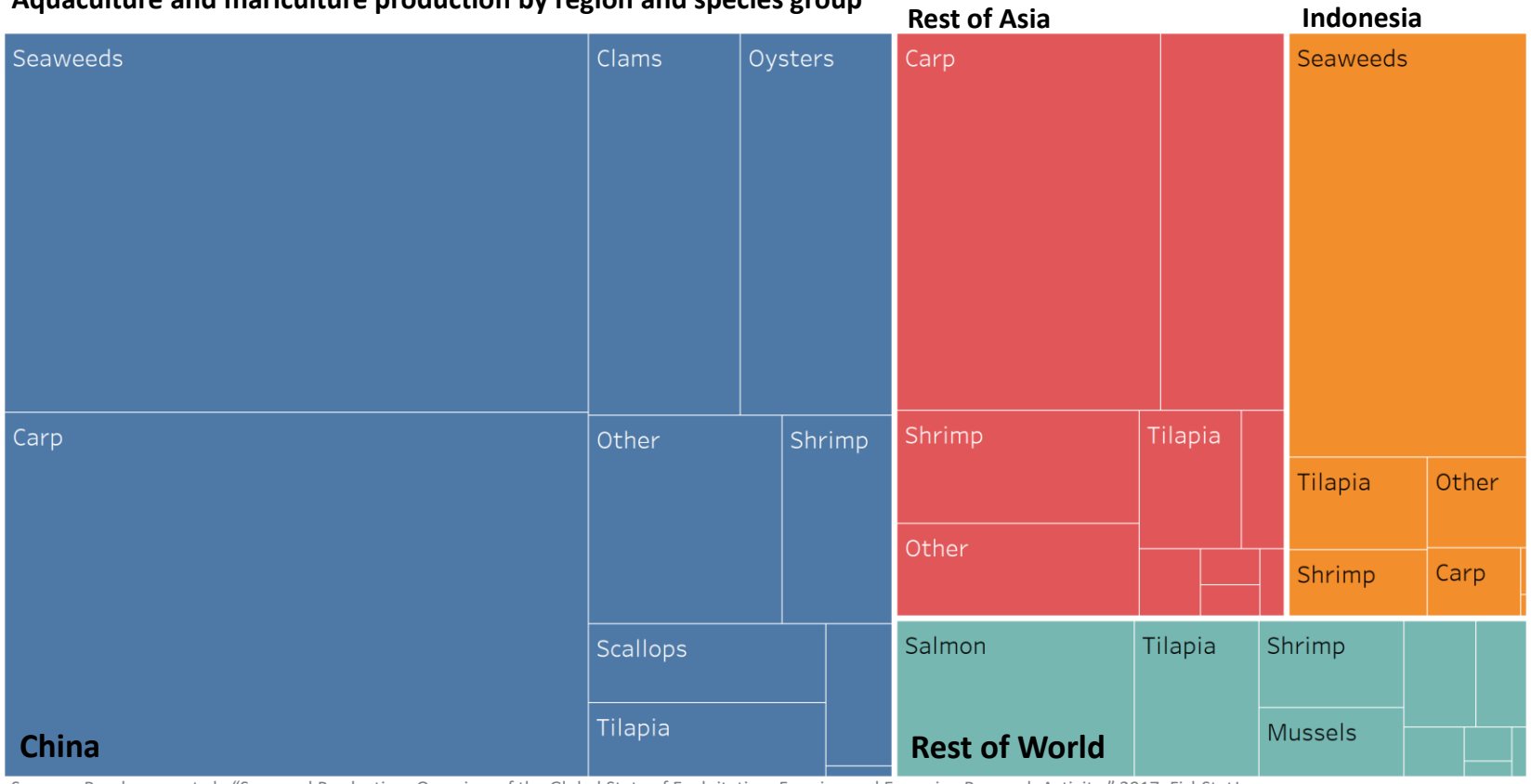


Source: FishStatJ.
Note: Aquaculture and mariculture production includes inland waters and seaweeds, which are excluded from wild-capture landings.

Carp and other freshwater species, primarily grown in Asia, account for one-third of aquaculture and mariculture produced globally

China produces ~58% of global aquaculture and mariculture, and the rest of Asia accounts for most of the non-Chinese production. Indonesia's production is rapidly expanding: most species groups have an annual growth rate greater than 20%. About 99% of farmed seaweed is used to produce thickening and gelling agents for the pharmaceutical and food industries.

Aquaculture and mariculture production by region and species group



Sources: Buschmann et al., "Seaweed Production: Overview of the Global State of Exploitation, Farming and Emerging Research Activity," 2017; FishStatJ.
Boxes without labels represent smaller commodities such as clams and oysters; these labels have been removed for visual effect.

PRODUCER-LEVEL PROGRESS

Key takeaways

- Excluding aquatic plants, 17% of global seafood production is MSC or ASC certified or rated Seafood Watch "Best Choice." Among global production, 5% is improving and the remainder is unassessed, needs improvement, or is data deficient. In 2021,15% of wild-caught seafood was MSC certified, up from 12% in 2016.
- The Global Sustainable Seafood Initiative recognizes nine sustainable seafood certifications.
- Seafood Watch has rated 13% of global wild-caught seafood, up from 10% in 2012. Seafood Watch ratings have been applied to 37% of global wild-capture fisheries and aquaculture production.
- Twenty FIPs have either completed their objectives or moved into MSC full assessment. In 2021, 154 active FIPs were reported on FisheryProgress (up from 141 in 2020). FIP volumes (which are led by the US, Peru, and the EU) stabilized at 9.8% of global catch, reflective of more accurate reporting of engaged volumes.
- BAP and ASC continue to grow their certified farm volumes as a share of global production. The Certifications and Ratings Collaboration found that 24.6% of farmed production, excluding aquatic plants, is certified or Seafood Watch "Best Choice."

METRICS INCLUDED:

Status of global production

Certifications and ratings data

Fishery improvement projects

Aquaculture

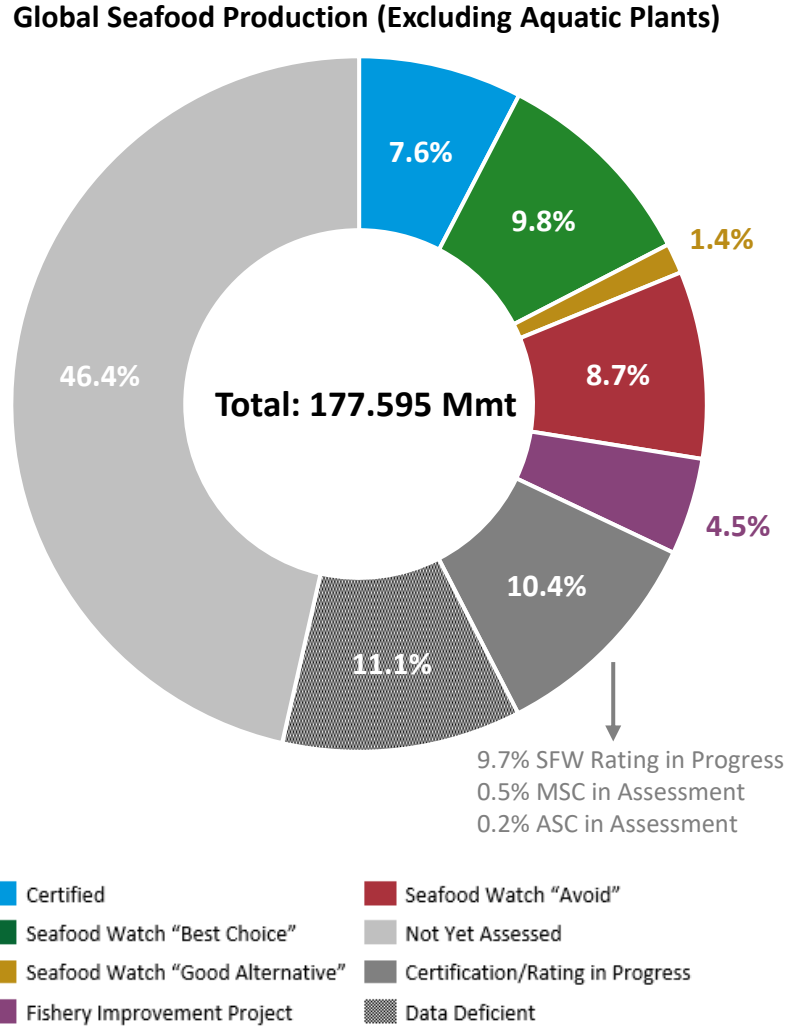
About 17% of global seafood production, excluding aquatic plants, is certified or rated Seafood Watch "Best Choice," while 5% is improving and 77% is not yet assessed or needs improvement

About 17.4% of worldwide production, not including aquatic plants, is certified or rated Seafood Watch "Best Choice," according to the Certification and Ratings Collaboration's 2021 Sustainable Seafood Data Tool. Most Seafood Watch "Best Choice" production consists of farmed seaweed and bivalves.

The Sustainable Seafood Data Tool tracks the performance of global seafood against six global programs: Collaboration members ASC, Fair Trade USA, MSC, Seafood Watch, and Sustainable Fisheries Partnership, as well as external collaborator Global Seafood Alliance's BAP program.

The remaining global production, excluding aquatic plants, is unassessed, needs improvement, or is actively improving. This includes 10.1% that is rated Seafood Watch "Good Alternative" or "Avoid," indicating a need for improvement. While 4.5% of global production is currently engaged in a fishery or aquaculture improvement project, and assessments or ratings are underway for 10.4%, 57.5% of global seafood production remains unassessed and not yet engaged in improvements by Collaboration members. Further, 11.1% of global production is data deficient and without a species designation, which precludes assigning a certification or rating to this production.

The Collaboration prioritizes fisheries and aquaculture farms for assessment and improvement based on environmental and/or social risk and market support for improvements.



"Data deficient" refers to when no species are reported. Sources: Communication with Ed Walz, Springboard Partners; Kiel Edson, Monterey Bay Aquarium; and Liane Arness, Certification and Ratings Collaboration in July 2022; Certification and Ratings Collaboration, 2021 Sustainable Seafood Data Tool.

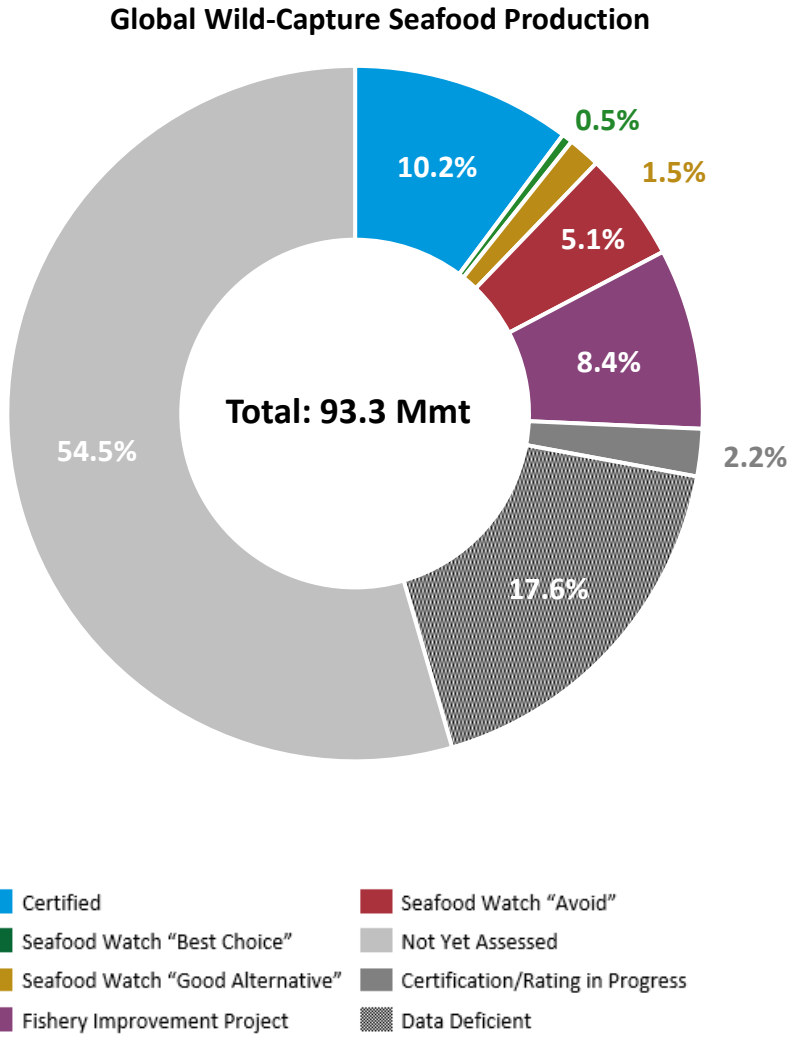
About 25% of wild-caught seafood is certified, rated, or in an improvement project; more than two-thirds remains unassessed

About 25% of wild-caught seafood production is rated or certified by Certification and Ratings Collaboration members, or in a FIP. A total of 12.2% of this production, largely tuna and whitefish, is rated Seafood Watch "Best Choice" and "Good Alternative" or is certified.

In addition, 8% of wild production is improving through public FIPs. Pelagic species, like anchoveta and tuna, account for the majority of FIP production.

An estimated 5.1% of wild-caught seafood production is rated Seafood Watch "Avoid" and needs improvement.

An additional 2% of wild-capture production is currently under assessment or rating. Further, 72% of wild seafood production is unassessed or not yet engaged by Certification and Ratings Collaboration members. Last, 17.6% of wild-capture production is data deficient and without species designation, which precludes assigning a certification or rating to this production.



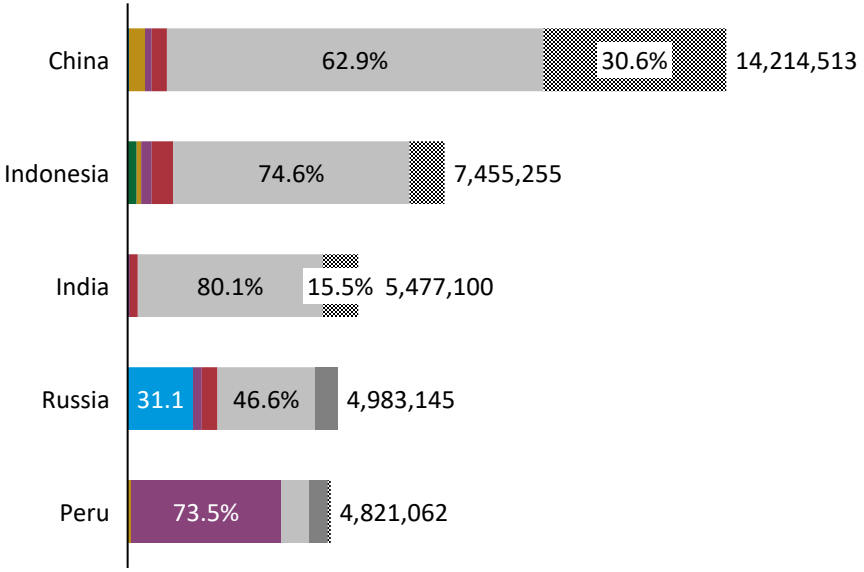
"Data deficient" refers to when no species are reported. Sources: Communication with Ed Walz, Springboard Partners; Kiel Edson, Monterey Bay Aquarium; and Liane Arness, Certification and Ratings Collaboration in July 2022; Certification and Ratings Collaboration, 2021 Sustainable Seafood Data Tool.

Wild-capture fisheries in the top five producing countries remain largely unassessed, while the top five produced wild-capture species are only 20% unassessed

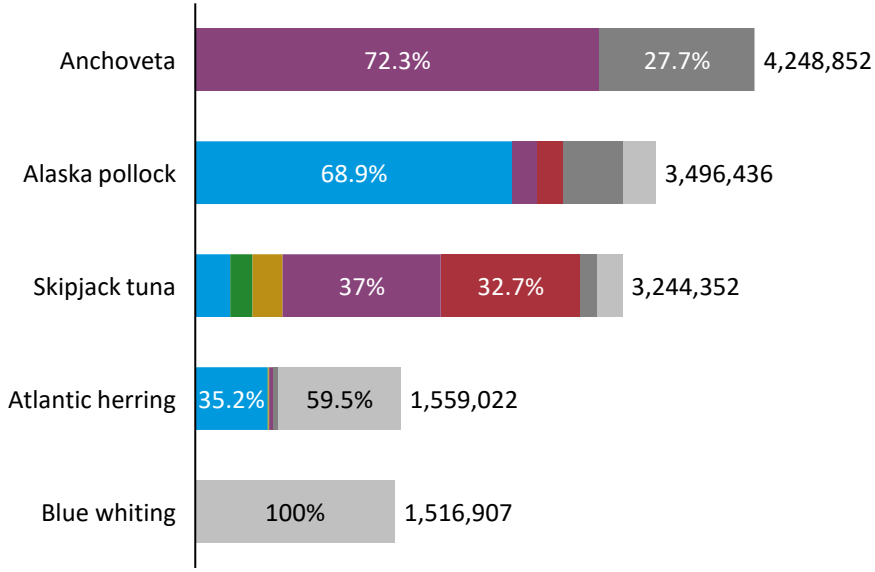
The top five producing countries of wild-capture seafood produce 40% of the global wild-capture production, of which 10.7% is certified or rated Seafood Watch "Best Choice," 1.5% is rated Seafood Watch "Good Alternative," 8.4% is in a FIP, 5.1% is rated Seafood Watch "Avoid," 2.8% has a certification/rating in progress, and 72.1% is not yet assessed.

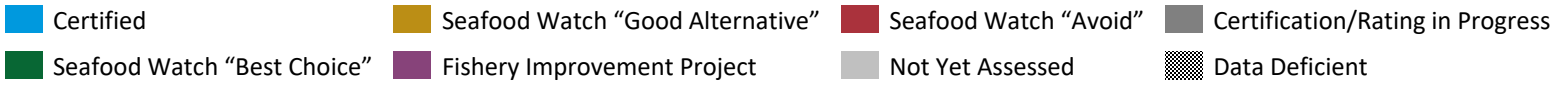
The top five produced wild-capture species represent almost 15% of the global capture production, of which 24.1% is certified or rated Seafood Watch "Best Choice," 1.7% is rated Seafood Watch "Good Alternative," 31.9% is in a FIP, 8.9% is rated Seafood Watch "Avoid," 8.4% has a Seafood Watch rating in progress, 4.4% is MSC in assessment, and 20.5% is not yet assessed.

Top 5 Producing Countries of Wild-Capture Seafood (mt)[1]



Top 5 Produced Wild-Capture Species (mt)[1, 2, 3]



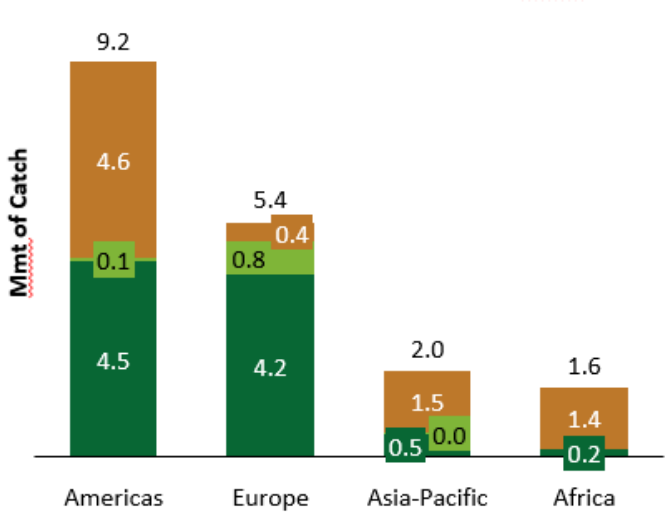


Sources: Communication with Ed Walz, Springboard Partners; Kiel Edson, Monterey Bay Aquarium; and Liane Arness, Certification and Ratings Collaboration in July 2022; Certification and Ratings Collaboration, 2021 Sustainable Seafood Data Tool. 1. Percentages are only specified numerically in the graphs when they represent more than 15% of the seafood production of the country or species. 2. "Freshwater fishes nei" is not included. 3. "Marine fishes nei," the top production category, is not included. "Data deficient" refers to when no species are reported. For additional detail, visit the 2021 Sustainable Seafood Data Tool.

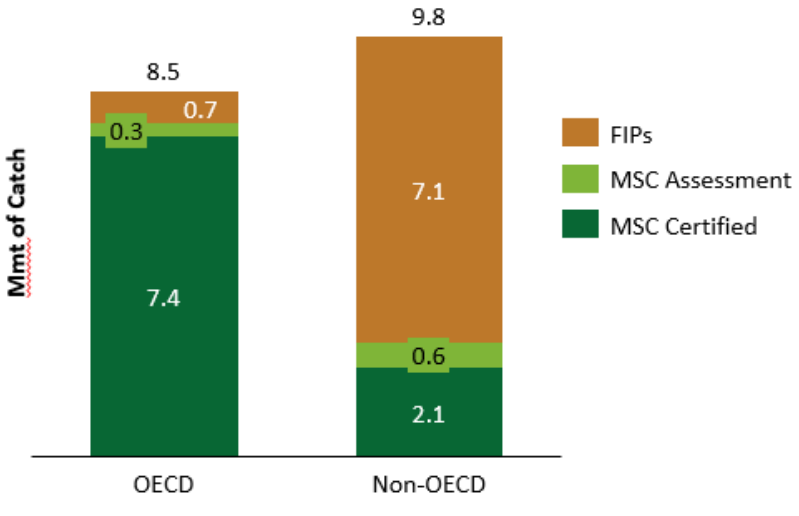
About 75% of MSC-engaged volume is from OECD countries or Russia, while more than 90% of FIP volume comes from non-OECD countries

Nearly all MSC catch remains from higher-income countries; 7.7 Mmt (75%) of catch that is MSC certified or in MSC assessment is from an OECD country, which does not include Russia. FIPs in higher-income countries tend to focus on low-volume, high-value commodities, such as mollusks. For non-OECD countries, Peruvian anchoveta accounts for 40% of all FIP volume; the other 60% comes from FIPs across commodity groups and continents.

Engaged catch by continent (Mmt of catch)



Engaged catch by OECD status (Mmt of catch)



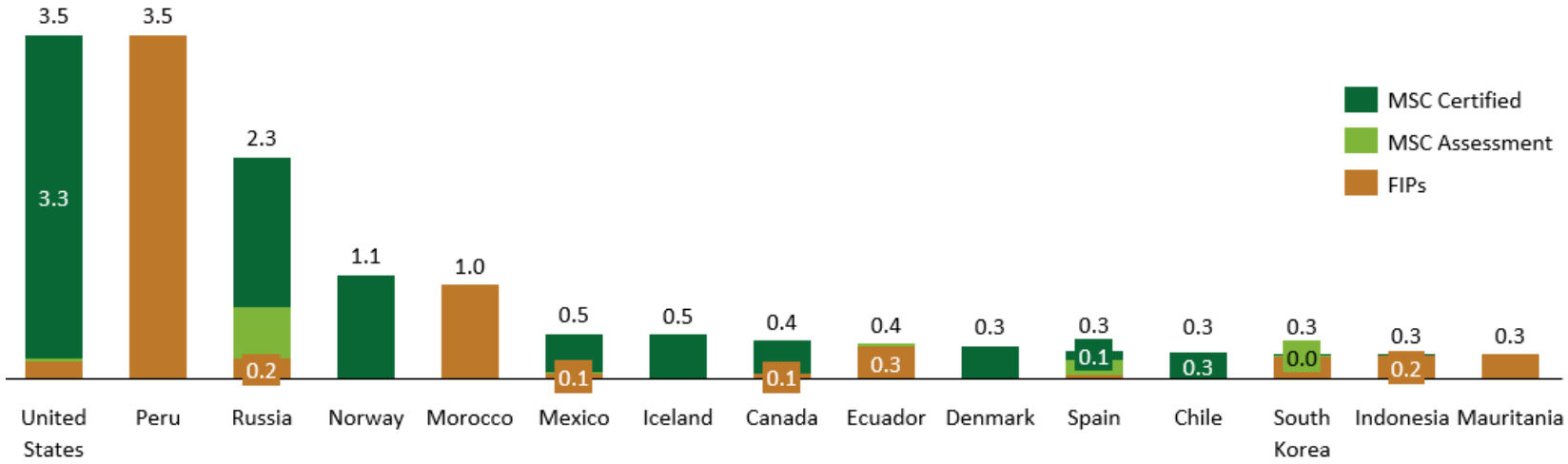
Source: CEA Consulting analysis of volume data provided by the Certifications and Ratings Collaboration in April 2022.
FIP volumes are self reported to FisheryProgress and may be overestimates because FIPs are defined differently from how government landings data is collected and reported. Volumes exclude aquaculture/mariculture, inland waters, and non-edible species. Global landings vary annually, so both the numerator and denominator are dynamic when calculating the percentage of global landings engaged each year.

The US has surpassed Peru as the country with the most MSC-certified and FIP-engaged volume; Peruvian anchoveta remains the largest engaged fishery

Peruvian anchoveta is the largest engaged fishery in the world, landing more volume than any other country's engaged catch (e.g., MSC certified, in MSC full assessment, or participating in a FIP) combined, except for the US. Annual catch for this fishery varies due to environmental factors, such as the El Niño–Southern Oscillation.

The US has the largest MSC-certified volume, driven by whitefish and salmon, followed by northern European countries. Other countries, including Indonesia, Chile, China, and Mexico are increasing their FIP-engaged and certified volumes, although volumes still lag far behind countries with greater capacity for fisheries governance.

Engaged catch from countries of interest (Mmt of catch)

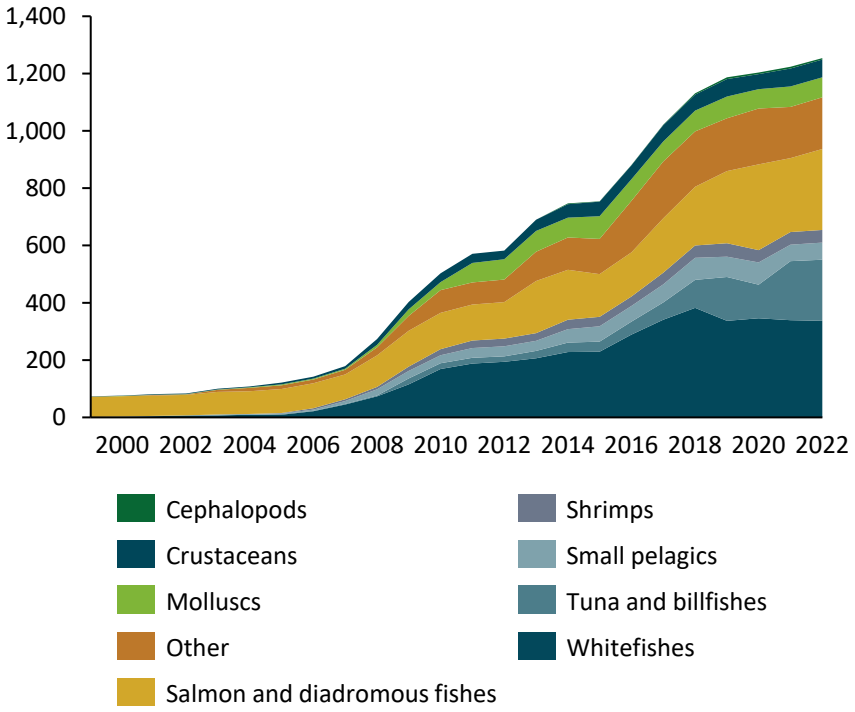


Source: CEA Consulting analysis of volume data provided by the Certifications and Ratings Collaboration in April 2022.

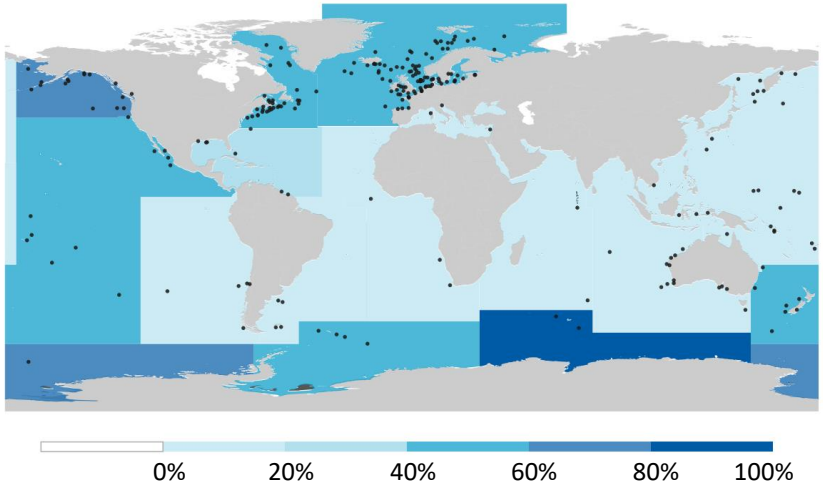
MSC is increasingly engaging fisheries in lower-income countries, though certified volumes remain relatively low in those geographies

MSC has certified 1,131 units of assessment[1] in 55 countries (including suspended fisheries), and another 123 are currently in assessment. Almost 20% of MSC's engaged catch by volume is in lower-income regions, representing 84 fisheries in 29 countries.

Units of assessment by species group



Proportion of major fishing area catch that is MSC certified[2]



1. The "unit of assessment" is the full scope of what is being assessed: the target stock(s) combined with the fishing method or gear type(s), vessel type(s), and/or practices, and the fishing fleets or groups of vessels, or individual fishing operators pursuing that stock, including any other eligible fishers that are outside of the proposed Unit of Certification. 2. MSC-certified catch and fishery data for the 2020-21 financial year, compared with total catch for each FAO major fishing area in 2018.
Sources: MSC, "Annual Report," 2020-2021; communication with Niamh O'Suillibhan, MSC in April 2022.

Suspension of an Atlantic mackerel fishery caused a decrease in MSC's certified volume

The certified volume of small pelagics decreased significantly in 2019 because of MSC's suspension of the Mackerel Industry Northern Sustainability Alliance North East Atlantic mackerel fishery, which accounts for 800,000 tonnes of catch. This suspension affected four certificates for fisheries across eight countries, and comes after the mackerel stock in the northeast Atlantic dropped below a precautionary threshold level with catches far higher than advised by scientists.

Otherwise, FIP- and MSC-engaged volume remains relatively stable across most commodity groups, covering about 23% of global landings.

Total landings volume from FIPs and the MSC program by species group

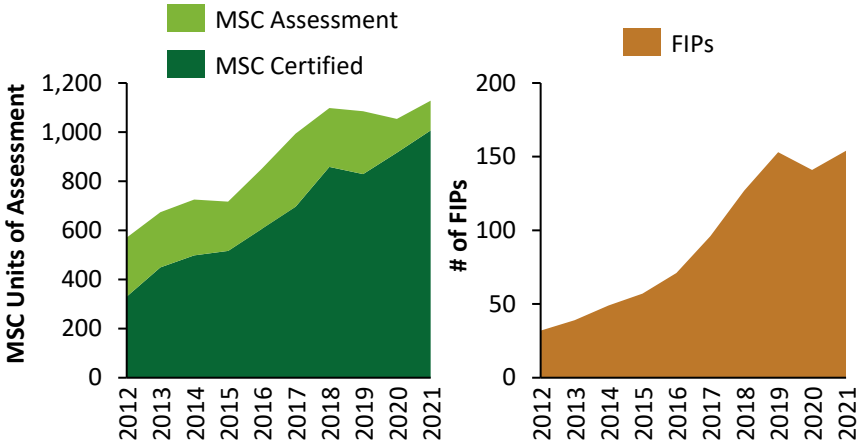
Commodity	FIP*	MSC	Combined Tonnage	% Global Landings
Crabs, lobsters, crustaceans	228	195	423	19%
Major tuna species	1,746	690	2,436	45%
Miscellaneous fish	135	880	1,014	5%
Mollusks	62	305	367	15%
Other tunas, bonitos, billfishes	129	3	132	5%
Salmon and diadramous fish	152	561	713	6%
Sharks and rays	36	3	39	6%
Shrimp	168	301	469	16%
Small pelagics	4,462	1,657	6,119	36%
Squid/octopus	506	39	545	15%
Whitefish	231	5,732	5,963	58%
Total	7,854	10,365	18,220	23%

Thousand tonnes of catch

Source: CEA Consulting analysis of volume data provided by the Certifications and Ratings Collaboration in April 2022.
FIP volumes are self reported to FisheryProgress and may be overestimates because FIPs are defined differently from how government landings data is collected and reported. Certain species, like tuna, may represent volumes pulled from government reports reflecting the total fishery volume, rather than just the FIP volume.

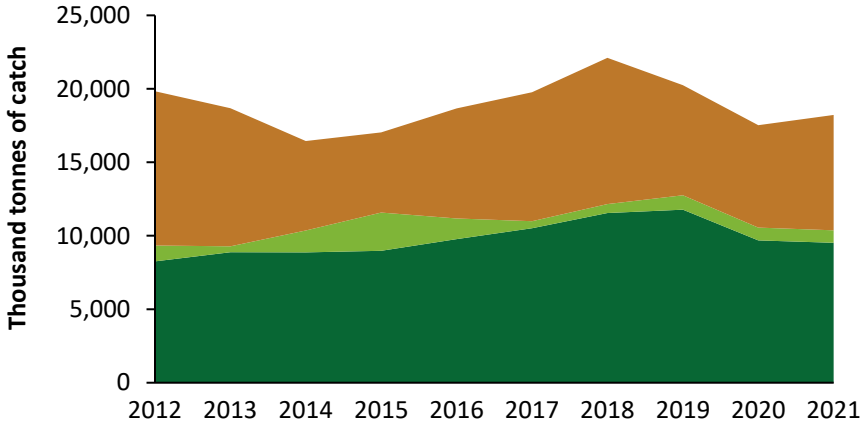
Despite growth in fisheries engaged in FIPs and MSC, total volume has declined due to the suspension of a few key species like Atlantic mackerel in 2019

	FIPs			MSC Full Assessment			MSC Certified			Total	
	# of FIPs	Landings ('000 tonnes)	% of Global Catch	Units of Assessment	Landings ('000 tonnes)	% of Global Catch	Units of Assessment	Landings ('000 tonnes)	% of Global Catch	Landings ('000 tonnes)	% of Global Catch
2012	32	10,490	13.8%	240	1,080	1.4%	330	8,256	10.8%	19,826	26.0%
2013	39	9,391	12.2%	225	405	0.5%	449	8,877	11.5%	18,673	24.2%
2014	49	6,090	7.9%	227	1,494	1.9%	498	8,861	11.4%	16,445	21.2%
2015	57	5,459	6.9%	201	2,593	3.3%	516	8,980	11.4%	17,032	21.6%
2016	71	7,493	9.8%	245	1,405	1.8%	606	9,768	12.8%	18,666	24.4%
2017	96	8,782	11.1%	298	479	0.6%	696	10,510	13.2%	19,771	24.9%
2018	127	9,955	12.5%	240	606	0.8%	858	11,543	14.5%	22,104	27.9%
2019	153	7,496	9.4%	256	984	1.2%	829	11,768	14.8%	20,248	25.5%
2020	141	6,973	8.3%	138	865	1.0%	916	9,687	11.5%	17,525	20.8%
2021	154	7,854	9.8%	121	847	1.1%	1007	9,518	12.9%	18,220	22.7%



Number of MSC units of assessment and FIPs engaged

Source: 2020 and 2021 landings data comes from CEA Consulting analysis of volume data provided by the Certifications and Ratings Collaboration in April 2022, while number of fisheries and previous years' landings data comes from FisheryProgress and MSC.



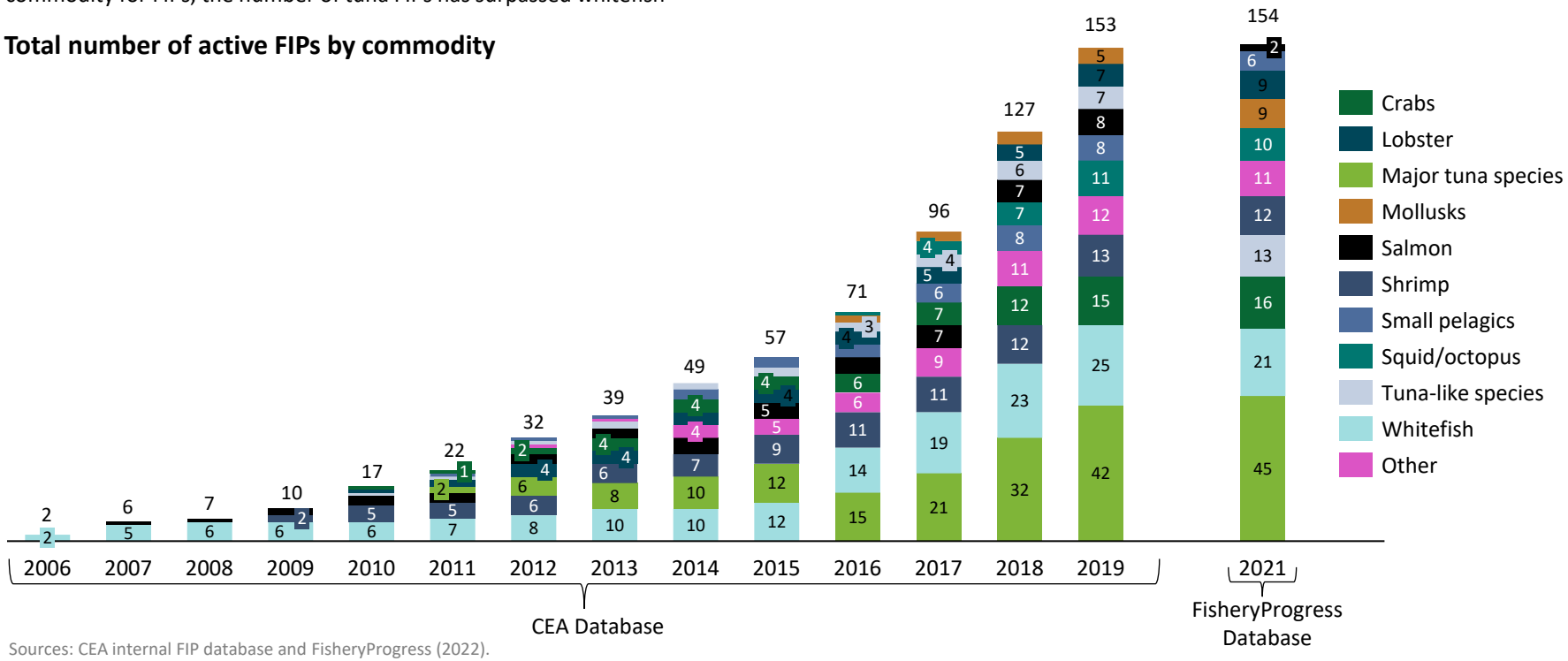
Total volume engaged in FIPs and MSC

Volumes include only active FIPs and exclude aquaculture/mariculture, inland waters, and non-edible species. Global landings vary annually, so both the numerator and denominator are dynamic when calculating the percentage of global landings engaged each year.

In 2021, 33 new FIPs were added, though a change in tracking methodology hides recent progress

The number of FIPs has been growing on every inhabited continent, including 33 new FIPs in 2021 and 32 in 2020. But due to an accounting methodology change (from CEA's internal FIP database for 2006-2019 to FisheryProgress's database for 2021), trends over time are not fully reflected in the graph below. While whitefish was the original flagship commodity for FIPs, the number of tuna FIPs has surpassed whitefish since 2016. This may be inflated, however, by several small FIPs addressing tuna, like in Indonesia, and by FIPs engaged in global partnerships like the World Wildlife Fund (WWF)/OPAGAC partnership that report as multiple different projects on FisheryProgress due to reporting requirements.

Total number of active FIPs by commodity

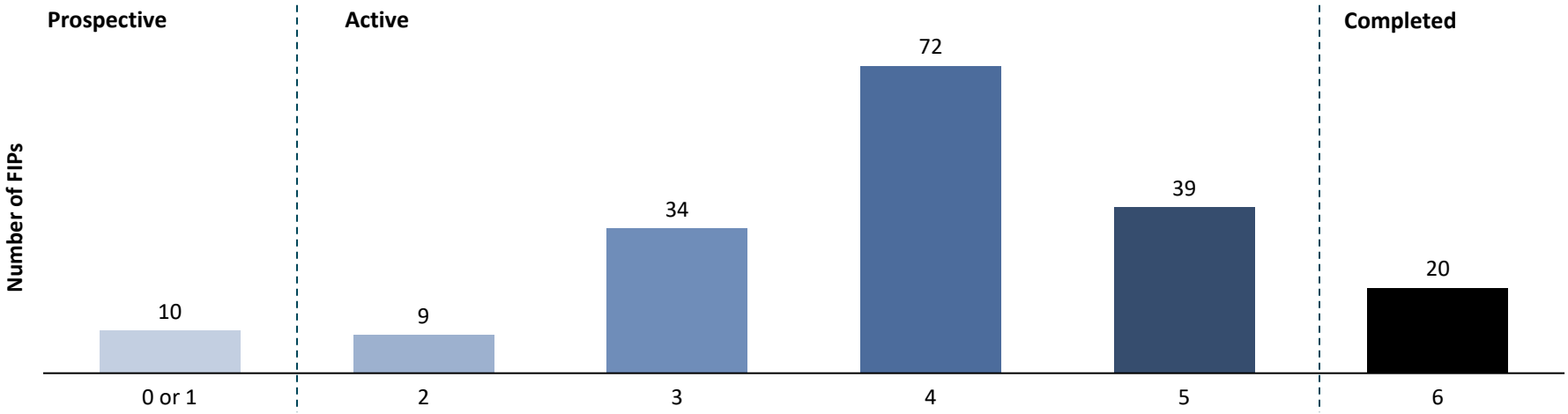


Sources: CEA internal FIP database and FisheryProgress (2022).
Note: The change in methodology for how FIP data is collected between 2019 and 2021 may have led to an underestimate of total FIPs in the most recent year available (FIP data for 2021 only includes FIPs reported on FisheryProgress, as opposed to CEA's internal FIP database, which monitored all global FIPs from 2006 to 2019). A detailed breakdown of FIPs by commodity is not available for 2020. FIPs that become inactive over time are also not shown. Some inactive FIPs reflect failure to meet reporting requirements, rather than inactivity on the ground. For a more detailed methodology of FIP accounting from 2006 to 2019, see the "2020 Landscape Review of FIPs."

More FIPs continue to enter Stages 4 and 5, and two FIPs were completed in 2021

FIPs are classified by "stage." Earlier-stage FIPs have developed a workplan (Stage 2) and have begun implementation and tracking their progress (Stage 3). FIPs that report changes in fishing practices or management, or improvements on the water, are classified as Stage 4 and Stage 5, respectively. Currently, most FIPs are in Stage 4, meaning that there has been a change in a policy or practice, but there has not yet been change on the water. Twenty FIPs have successfully completed all their objectives and moved into MSC full assessment.

Number of FIPs by stage



Note: For a more complete explanation of FIP stages, please refer to Conservation Alliance for Seafood Solutions, "Guidelines for Supporting Fishery Improvement Projects."
Source: Communication with FisheryProgress, April 2022.

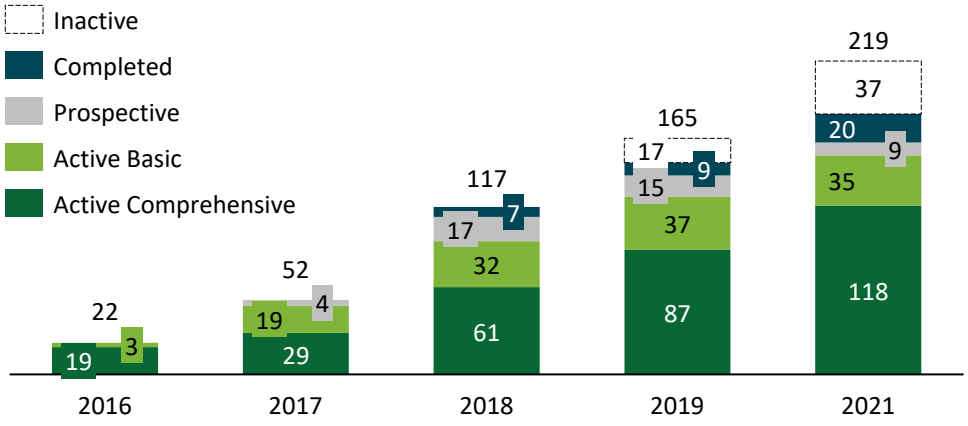
Six years after its launch, over 200 FIPs in 84 countries are reporting on FisheryProgress, and the site has increased focus on social responsibility

FisheryProgress launched in 2016 to help inform companies, NGOs, and government officials of the status of FIPs. Companies can use FisheryProgress to inform their sourcing decisions, and many company sustainability policies now require FIPs to be listed on the website.

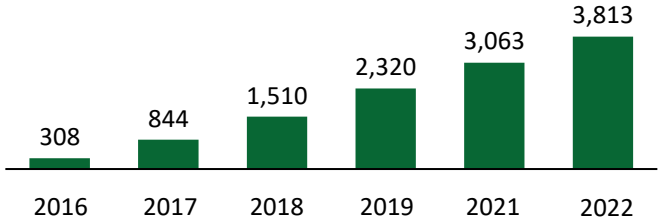
Since the site launched in 2018, 20 FIPs have been completed,[1] 57 FIPs have moved from prospective to active status, and 18 FIPs have moved from basic to comprehensive.

FisheryProgress launched its Human Rights and Social Responsibility Policy in May 2021 and aims to help FIPs reduce the risk of human and labor rights abuses while providing a common reporting framework for social performance in fisheries (see more on page 120).

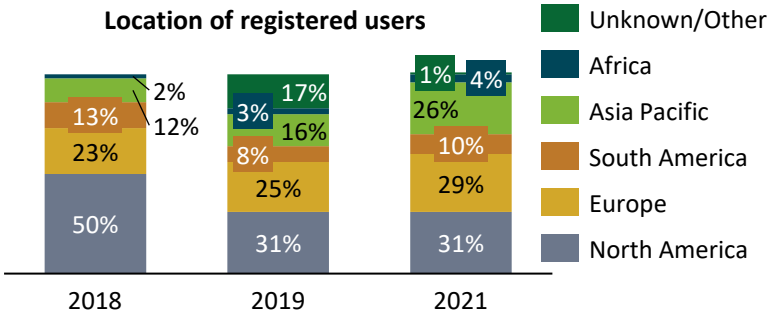
Number of FIPs reported on FisheryProgress[3]



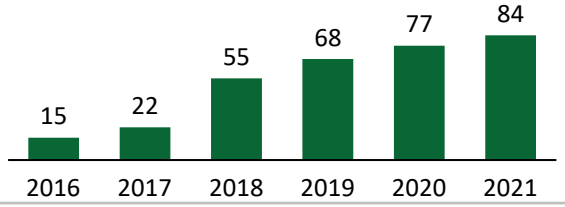
Number of registered users



Location of registered users



Number of countries with FIPs reporting on FisheryProgress[2]

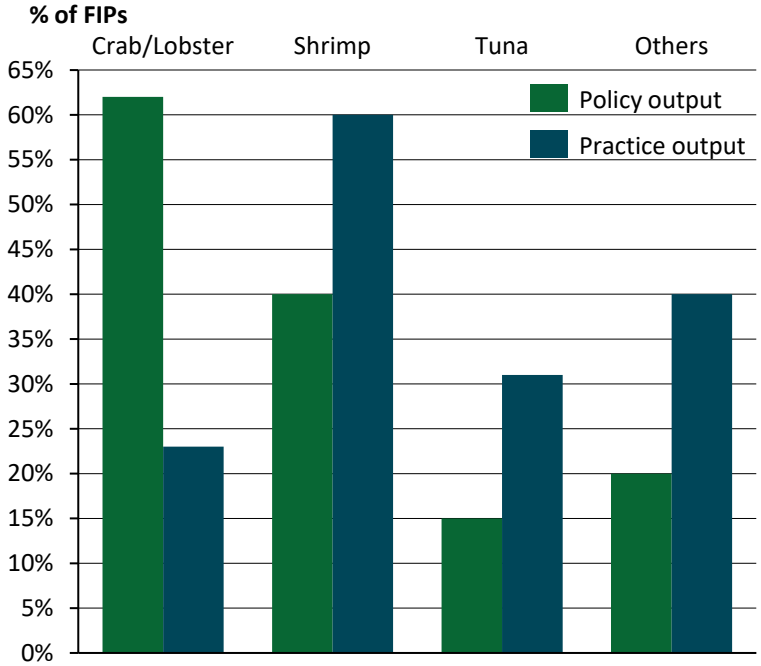


Notes: 1. FIPs do not have to enter MSC full assessment to be considered complete. "Completed" refers to a FIP that meets its sustainability goals and can produce evidence thereof. 2. Number of countries includes those with active, prospective, inactive, and completed FIPs on the site. Source: Communication with Kristin Sherwood, FishChoice, April 2022. 3. FIPs reported on FisheryProgress for earlier years (2016-2019) differ slightly from the total number of FIPs tracked in the CEA database and may be an underestimate of the total number of active FIPs.

FIP impact differs according to FIP species, with crab and lobster FIPs reporting the greatest number of policy changes

A recent white paper by Van Holt et al. (2022) found that FIP impacts differ according to FIP species. Crab and lobster FIPs reported the greatest number of policy changes (such as management plans and rules for limiting catch), while shrimp FIPs reported the greatest number of practice changes (such as gear changes and observer and traceability programs). On the action side, tuna FIPs were the most likely to engage in dialogue and had high rates of data collection and/or data analysis.

Percentage of FIPs by species group reporting on policy and practice outputs



Actions reported by FIPs by species categories

Action Type	Crab/ Lobster	Shrimp	Tuna	Others
Basic Dialogue - Policy	46%	60%	92%	55%
Basic Dialogue - Practice	46%	20%	62%	45%
Dialogue Data	54%	60%	69%	80%
Engaged Dialogue - Policy	54%	10%	38%	25%
Engaged Dialogue - Practice	38%	60%	92%	45%
Rally Support	31%	10%	8%	10%
Data Collection and/or Data Analysis	92%	60%	69%	65%
Education	54%	30%	23%	15%
Incentives	8%	0%	0%	5%

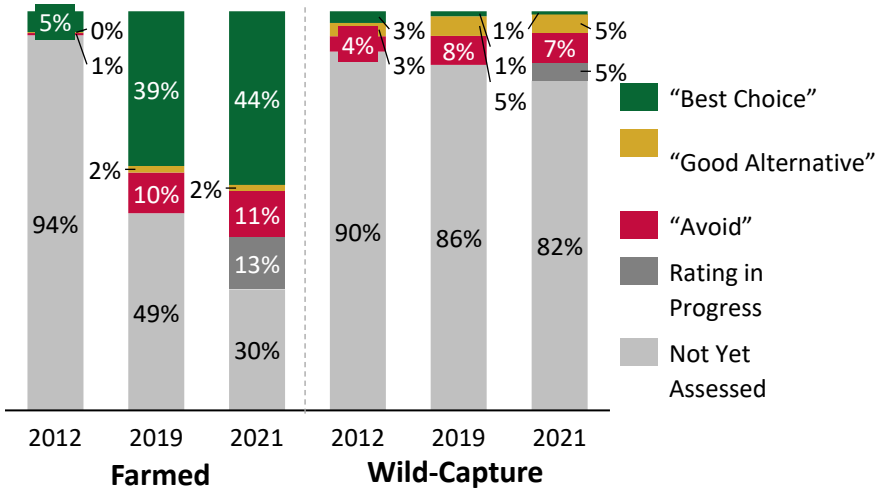
Sources: T. Van Holt, S. Käll, B. Crona, and G. Parlato, "Fishery Improvement Projects Workshop: Strategies, Successes, and the Future of FIPs," Final report for Fishery Improvement Projects Workshop Global Economic Dynamics and the Biosphere, Royal Swedish Academy of Sciences, 2022.

Seafood Watch has rated 13% of global wild-caught seafood, up from 10% in 2012

Monterey Bay Aquarium Seafood Watch ratings have now been applied to 37% of global wild-capture fisheries and aquaculture production, of which aquatic plants and mollusks make up a large portion of green-rated seafood.

Seafood Watch aims to evaluate 75% of global seafood production by 2030. Early on, the Seafood Watch program prioritized assessing fisheries and aquaculture products found in the US market. In recent years, Seafood Watch has shifted focus to assessing production outside of the US market, and capacity is split between maintaining existing assessments and assessing unrated production.

Ratings coverage of global wild and farmed seafood production, including aquatic plants[1]



Note: This graph refers to percentages and does not refer to total volume of farmed and wild-capture production, which are not equal. Source: Communication with Erin Hudson, Seafood Watch, April 2022.

Since 2018, Seafood Watch has also engaged in five improvement projects covering farmed shrimp, farmed salmon, and blue swimming crab. These projects use Seafood Watch's Partnership Assurance Model, which brings together producers, processors, financial institutions, technology companies, government representatives, and committed end buyers to co-design, implement, and verify sustainability improvements throughout the production process. The partners agree on priority sustainability objectives, develop an implementation plan for meeting these objectives, adapt standards to the local context, and build a verification system.

Country	Species	Volume	Goal
Chile	Atlantic and Coho salmon	~610,000 mt annually (95% of Chile's annual production of farmed salmon)	By 2025, reduce antibiotic use by 50% compared to 2017 levels and achieve "Good Alternative" rating
Vietnam	Giant tiger prawn	~40,000 mt annually (10% of Vietnam's annual production of giant tiger prawn)	By 2025, 20,000 giant tiger prawn farms in the Southern Mekong Delta achieve "Best Choice" rating
Vietnam	Whiteleg shrimp	~160,000 mt annually (40% of Vietnam's annual production of farmed shrimp)	By 2030, whiteleg shrimp in the Southern Mekong Delta achieve "Good Alternative" rating
India	Whiteleg shrimp	~375,000 mt annually (60% of India's annual production of whiteleg shrimp)	By 2025, whiteleg shrimp in Andhra Pradesh achieve "Good Alternative" rating
Philippines	Blue swimming crab	~13,000 mt annually (40% of the Philippines' annual production of blue swimming crab)	By 2025, blue swimming crab in the Visayan Sea achieve "Good Alternative" rating

GSSI recognizes nine certifications and schemes; a joint social benchmarking tool is forthcoming

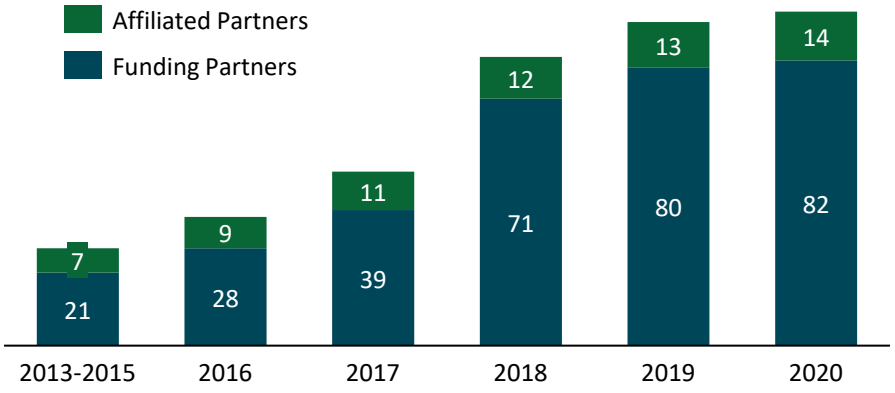
Established in 2016, the Global Sustainable Seafood Initiative (GSSI) aims to ensure confidence and alignment in the seafood supply chain by benchmarking seafood certification schemes. The Global Benchmark Tool uses FAO guidelines to formally recognize certification schemes that complete the benchmarking process. Following a three-year review of the tool, V2.0 framework revisions were released in October 2021 to reflect new FAO guidelines and simplified component language.

Additionally, in collaboration with IDH, the Sustainable Trade Initiative, and Sustainability Incubator, GSSI released the theoretical design for Seafood MAP, a framework that provides guidance to producers on sustainable fishing practices. GSSI also works with The Consumer Goods Forum's Sustainable Supply Chain Initiative to develop benchmark criteria that reflect the complexities of fisheries and aquaculture operations and risks associated with work at sea.

Current benchmarked certifications and schemes

1. Alaska Responsible Fisheries Management Certification Program (July 2016)
2. Iceland Responsible Fisheries Management Certification Programme (November 2016)
3. Marine Stewardship Council (March 2017)
4. Best Aquaculture Practices Certification (May 2017)
5. GLOBALG.A.P. Aquaculture Certification System (April 2018)
6. Aquaculture Stewardship Council (August 2018)
7. Audubon Gulf United for Lasting Fisheries Responsible Fisheries Management Certification Program (October 2018)
8. BIM Certified Quality Aquaculture Scheme (February 2019)
9. Marine Eco-Label Japan V2 Scheme for Aquaculture and Fisheries (December 2019)

GSSI partnership growth, 2013-2020



Year	2016	2017	2018	2019-2020
Total certification and schemes benchmarked	2	4	7	9

Sources: GSSI, "Annual Report," 2020; GSSI website.

ISSF's ProActive Vessel Register includes almost 1,500 vessels, promoting transparency in tuna fishing

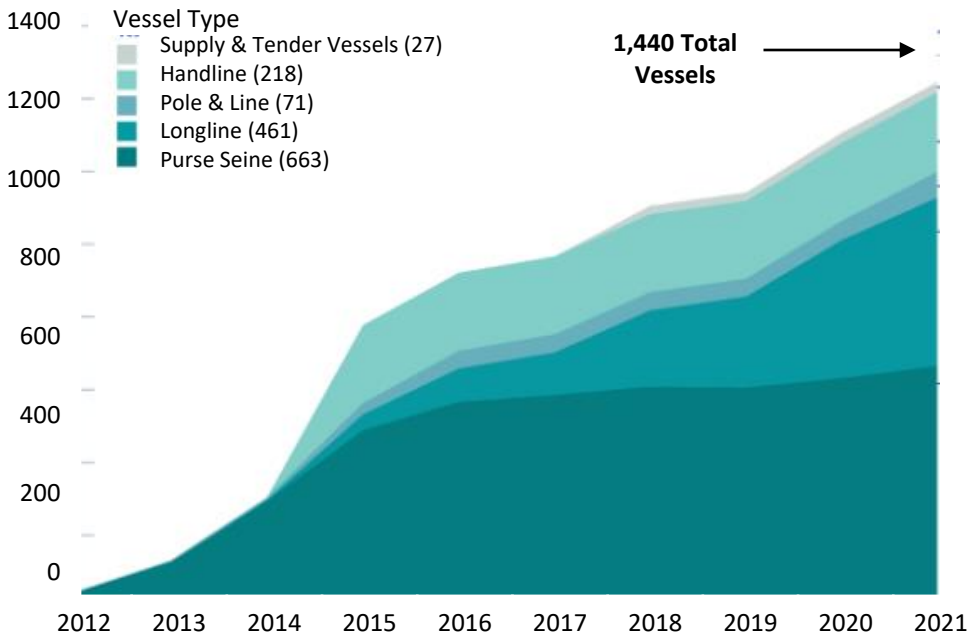
Launched in 2009 by a coalition of scientists, industry leaders, and environmental activists, the International Seafood Sustainability Foundation (ISSF) has sought to improve the sustainability of global tuna fishing. As of 2021, ISSF's advocacy work supported 45 conservation measures or policies governing RFMO support; traceability; bycatch mitigation; monitoring, control, and surveillance; IUU fishing; and social/labor standards.

Current advocacy priorities include:

- Implementation of rigorous harvest strategies, including harvest control rules and reference points
- Effective management of fleet capacity, including establishing mechanisms that support developing coastal state engagement in the fishery
- Science-based fish aggregating device management measures and requiring the use of non-entangling and biodegradable device designs
- Strengthened RFMO member compliance processes, including greater transparency of these processes to ensure full compliance with all adopted measures
- Strengthened monitoring, control, and surveillance measures, including tightening the regulation of at-sea transshipment; reforming vessel monitoring systems; increasing observer coverage on fishing vessels and carriers through wider use of modern technologies, such as electronic monitoring and reporting; and adopting port state measures
- Adoption of best-practice bycatch mitigation for sea turtles, sharks and rays, and seabirds, along with effective shark conservation and management measures

The ISSF ProActive Vessel Register is a public database that tracks vessel information, including with respect to certain fishing activities. Vessel owners committed to sustainability may add themselves to the Register, enabling buyers to source sustainably harvested tuna products. As of March 2021, 25 buyers had incorporated ISSF conservation measures and/or the Register into their sourcing decisions.

ProActive Vessel Register growth by vessel type, 2012-2021



Sources: ISSF, "Staying the Course: 2020 Annual Report," 2021; ISSF, "Advancing Sustainable Tuna Fisheries: A Five-Year Plan," 2018.

As of 2021, 51% of the world's production of marine ingredients was MarinTrust compliant; across 21 countries, 153 sites were MarinTrust certified

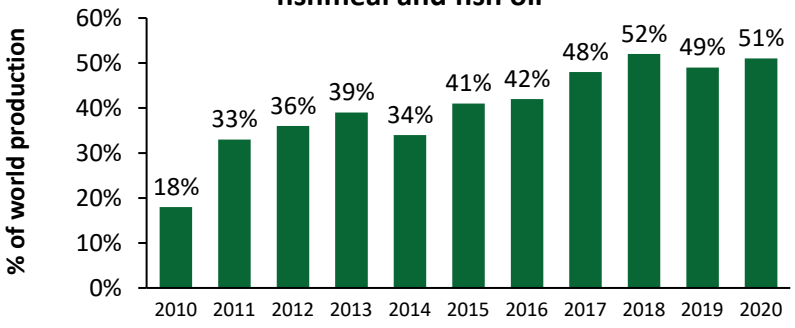
Around 51% of global fishmeal and fish oil production, representing over 3.2 million tons, is now compliant with the MarinTrust Standard (previously IFFO Global Standard for Responsible Supply). A total of 153 sites in 21 countries have been independently audited and certified against the MarinTrust Standard. In addition, 75 sites in 19 countries have been certified to the MarinTrust Chain of Custody standard.

MarinTrust Requirements:

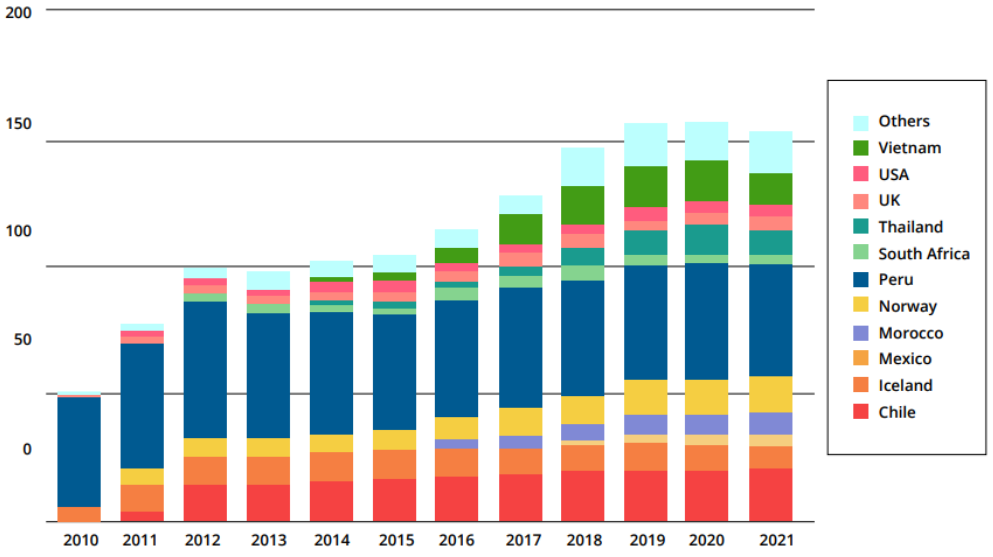
1. Source whole-fish raw material compliant with the FAO Code of Conduct for Responsible Fisheries
2. Avoid using fish caught by IUU fishing and byproducts from fish in the IUCN Red List
3. Manufacture under a robust quality control scheme

Standard	Description
MarinTrust	Certifies marine ingredient producers globally.
MarinTrust Chain of Custody	Allows marine ingredient users to demonstrate responsible sourcing.
MarinTrust Improver Programme	Encourages marine ingredient producers to implement improvements toward MarinTrust certification.

Combined world production of MarinTrust-compliant fishmeal and fish oil



MarinTrust certified sites, 2010-2022



Sources: MarinTrust, "2020/2021 Annual Report"; MarinTrust, "EFFOP," September 2021.

BAP sees 9% growth in certified facilities

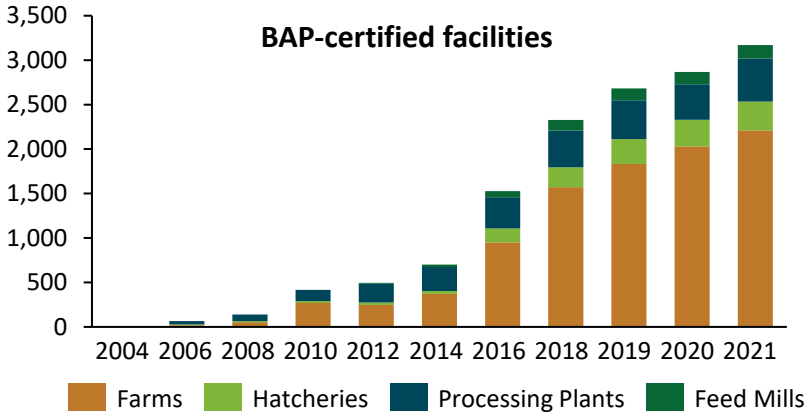
As part of the Global Seafood Alliance (GSA), Best Aquaculture Practices (BAP) certified 3,169 aquaculture production facilities worldwide, including 484 seafood processing plants and reprocessors, 2,211 farms, 150 feed mills, and 324 hatcheries by the end of 2021.

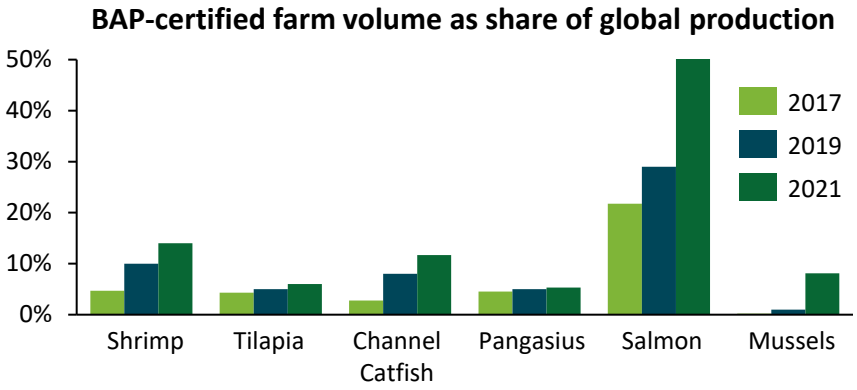
GSA, founded in 2021, is the result of a merger between Global Aquaculture Alliance and Global Seafood Assurances. GSA is a nonprofit trade association dedicated to advancing responsible seafood practices through education, advocacy, and third-party assurances, including its BAP and Best Seafood Practices certification programs. The organization's work addresses issues from environmental responsibility and social accountability to food safety.

The Seafood Processing Plant standard has been updated to include processing plants that handle wild-capture seafood, and the Responsible Fishing Vessel standard was acquired from the UK's Sea Fish Industry Authority, developed into a global standard, and released in May 2020.

BAP progress as of July 2022:

- BAP-certified facilities have a 93.6% yearly retention rate, covering a total of 3,169 producers and demonstrating 8.6% annual growth
- Over 300,000 people are employed in BAP-certified facilities across 39 countries and covering 30 species





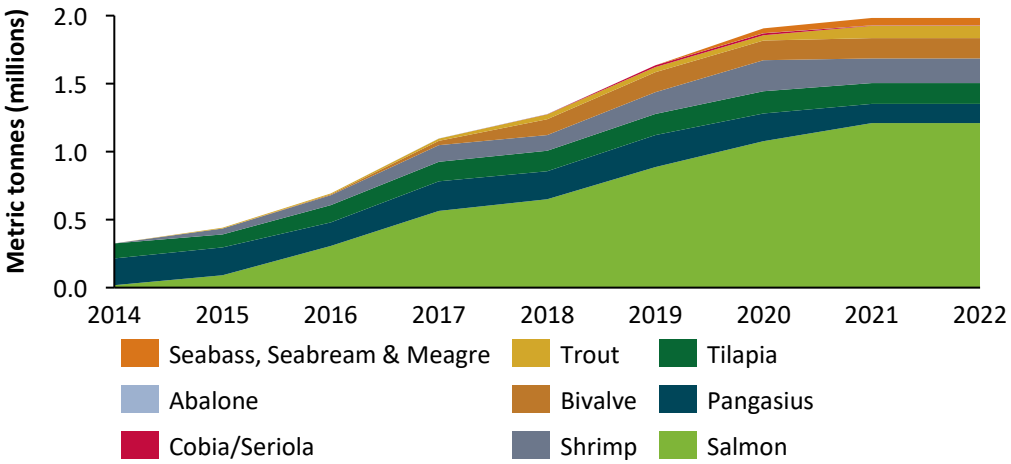
Note: 2017 and 2019 shares of global production for listed species groups are estimated based on FAO data from 2014. Plant volume data fluctuate due to the nature of certification and recertification timelines. Fluctuations occur to a larger degree for processing plants than for farms because plants tend to have larger production capacity. The 2021 shares of global production were estimated using the 2021 Certification and Ratings Data Tool.
Source: Communication with Melanie Siggs and Jane Bi, Global Seafood Alliance, July 2022.

ASC has more than tripled the number of certified farms in the last six years

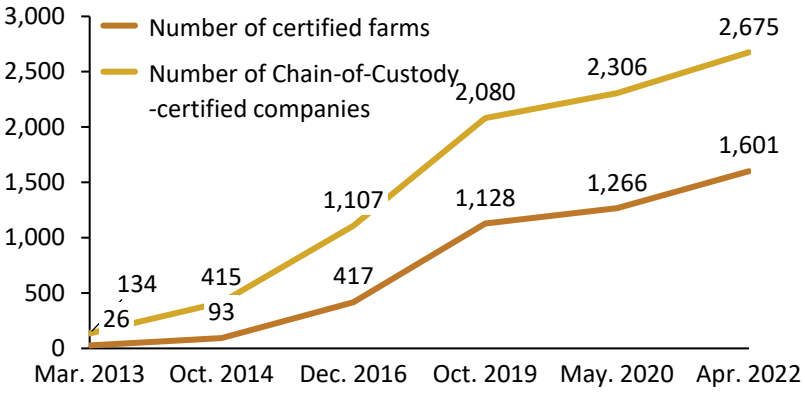
The Aquaculture Stewardship Council (ASC) has scaled rapidly since its entry into the space in 2010. There are now more than 21,000 ASC labeled products. Other developments since 2020 include:

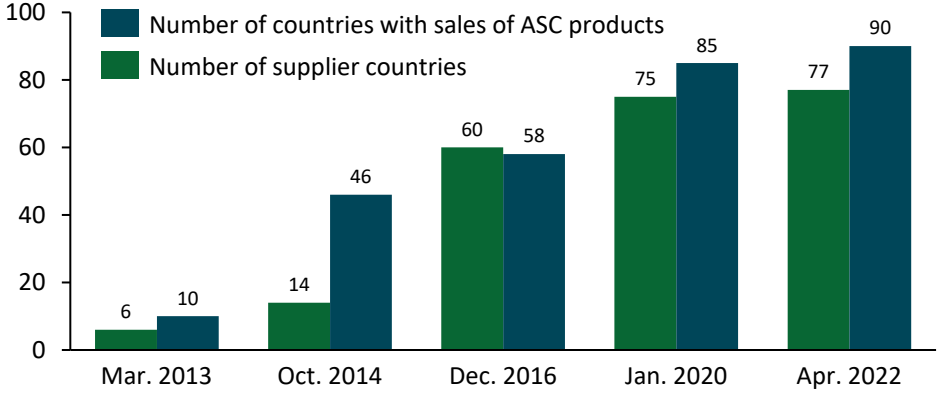
- Launching a feed standard to ensure that feed mills meet environmental and social requirements
- Releasing a revised ASC Shrimp Standard allowing freshwater crayfish and freshwater shrimp farmers to become certified
- Publishing ASC's first Monitoring and Evaluation report to measure the impact of the ASC program
- Releasing a Chain-of-Custody module to provide assurance and address issues such as seafood fraud and food safety
- Continuing to set and maintain farm standards for responsible aquaculture
- Establishing the Coastal Habitat Stewardship Fund to provide economic incentives to local communities in Ecuador in exchange for conserving mangrove forests

Production volume of existing ASC standards



Scale and reach of ASC





Source: Communication with Sun Brage, ASC, April 2022.

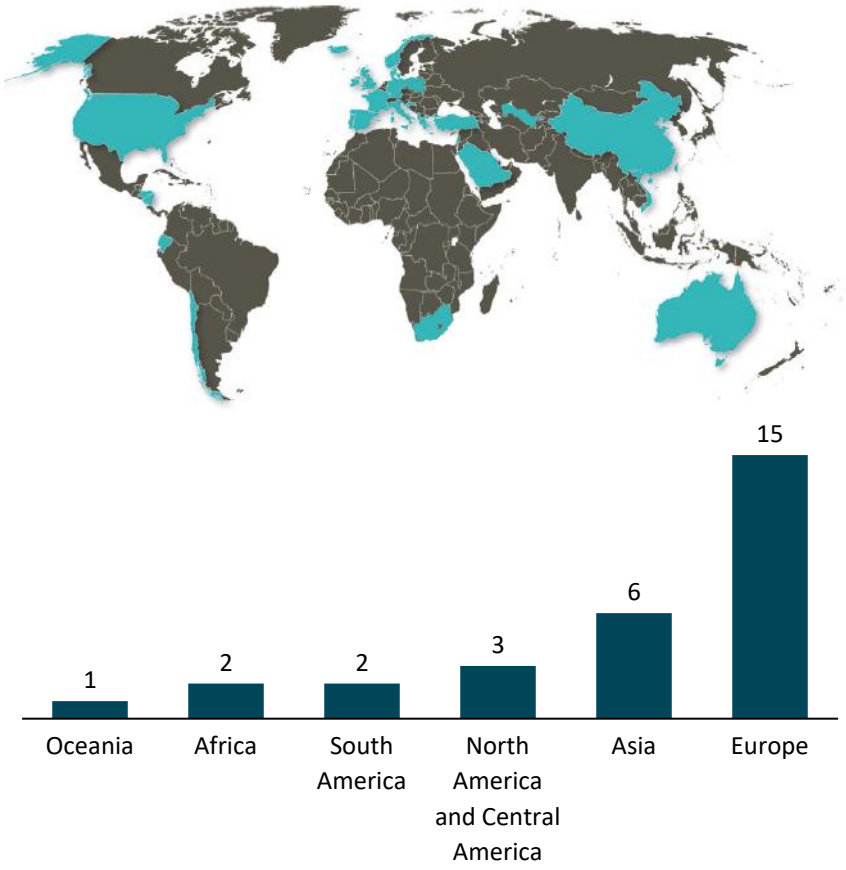
GLOBALG.A.P., established in 1997, has certified over 2.66 Mmt of aquaculture worldwide in 26 countries

The GLOBALG.A.P. aquaculture standard covers key sustainability aspects for animal health and welfare, worker health, safety and welfare, food safety, environment, and traceability for all stages of production.

GLOBALG.A.P. has certified over 2.66 Mmt of aquaculture worldwide and covers all species of finfish, crustaceans, mollusks, and seaweed. In total, 32 finfish species and five crustacean and mollusk species are available for certification. GLOBALG.A.P. standards are recognized by GFSI and GSSI for all species of finfish, crustaceans, shellfish, and seaweed.

GLOBALG.A.P. Standards	
Compound Feed	The GLOBALG.A.P. Compound Feed Standard requires aquaculture producers to source the compound feed used in farming from reliable suppliers.
Aquaculture Hatcheries and Farms	The GLOBALG.A.P. Aquaculture Standard applies to a range of fish, crustaceans, mollusks, and seaweed and extends to all hatchery-based species, as well as the collection of seedlings in the planktonic phase. It covers the entire production chain, from broodstock, seedlings, and feed suppliers to farming, harvesting, and processing.
Chain of Custody	The GLOBALG.A.P. Chain of Custody Standard gives aquaculture consumers and processors a high level of transparency by identifying the product's status throughout the entire production and supply chain, from farm to retailer.
Risk Assessment on Social Practice	The GLOBALG.A.P. Risk Assessment on Social Practice requires all certified aquaculture farms to be compliant though an assessment of social practices on the farm. There is a module covering worker welfare in addition to the Integrated Farm Assurance Standard, which covers worker health and safety.

29 countries have aquaculture producers under GLOBALG.A.P. certification*



*As of March 2022.

Source: Communication with Roberta Anderson, GLOBALG.A.P., April 2022.

CONSUMPTION & TRADE DYNAMICS

Key takeaways

- The COVID-19 pandemic caused significant disruption to the global seafood market, including a 22% decrease in US commercial landings revenue in 2020 and a 23% decrease in US seafood exports. Major pandemic-related setbacks to seafood value chains include lack of enforcement and monitoring of worker safety and labor rights at sea, increasing disincentives for producers to achieve certification, and logistics and higher shipping costs undermining sustainable alternatives. The pandemic has also highlighted opportunities for producers to diversify their supply chain nodes, shift toward high-technology solutions, and increasingly focus on local and domestic product markets.
- China's seafood consumption continues to be the highest globally—almost five times higher than that of the next largest consumers (India and Indonesia).
- In the US, seafood consumption has been flat or declining since 2014, except that shrimp consumption has increased. Though trends are preliminary due to data lags, the COVID-19 pandemic appears to have changed seafood consumption patterns, including a per capita decrease in salmon consumption.
- The quantity of globally traded high-value seafood has continued to grow. Markets beyond the US, the EU, and Japan—especially those in South and Southeast Asia—are among the fastest-growing importers of key commodities like shrimp and tuna, though in some cases the product is destined for re-export. These South and Southeast Asian markets are largely displacing Japan's market share.
- One third of seafood by value is going to EU countries with a developed sustainability market, such as Germany, the Netherlands, Sweden, and Denmark.

METRICS INCLUDED:

COVID-19 impacts

Global seafood consumption

Seafood trade flow data

Key commodity trade flow trends

The COVID-19 pandemic has produced far-reaching impacts and innovations across the seafood sector

The COVID-19 pandemic caused large-scale disruption to the global seafood market. While global assessments of the pandemic's implications are still ongoing, some reviews of impacts on specific markets exist, including NOAA's "U.S. Seafood Industry and For-Hire Sector Impacts from COVID-19: 2020 in Perspective." Key findings include:

- Commercial landings revenue declined 22% in 2020 relative to the five-year baseline (2015-2019).
- Seafood exports declined 23% in 2020 compared to the baseline.
- Seafood imports in 2020 were relatively flat compared to the baseline, declining just under 1%.
- Seafood retail sales increased significantly in 2020 across all seafood categories: frozen, up 36%; fresh, up 25%; and grocery (e.g., canned, pouches), up 21%. In contrast, food service sales declined sharply.

A Future of Fish report in 2022 identified major patterns in the ongoing response of the global seafood sector to the COVID-19 pandemic through October 2021. The report identifies setbacks in social responsibility and environmental sustainability (below), in addition to four key trends and opportunities (table). Setbacks include:

- Poor enforcement, significantly reduced monitoring, and increased rates of IUU pose concerns for worker safety at sea and in processing plants.
- High price of seafood undermines certifications—due to increased demand and limited supply, some fishers and distributors are receiving premiums without being certified, eroding the value proposition of these models.
- Enormous price sensitivity, especially in food service, is affecting the ability to push sustainable products that carry premium prices.
- Logistics disruptions and high shipping costs are forcing companies to find new sourcing options, which may not always be sustainable.
- Direct-to-consumer and home delivery growth is creating a packaging and waste crisis.

The COVID-19 pandemic and subsequent government responses have significantly affected workers in the fishing industry, as well as small-scale producers. A 2020 report from Oxfam reveals the additional challenges facing migrant workers and small-scale fishers, including:

- Strick lockdown measures pose additional financial and logistical burdens to migrant workers in need of personal protective equipment (PPE).
- Fishing vessel workers face an increased exposure to the virus due to cramped conditions aboard vessels and insufficient PPE.
- The demand drop in some seafood products has had a negative impact on the livelihoods of small-scale fishers.

Future of Fish identifies post-pandemic trends in the seafood market

Trend	Description
1. Diversification as a Long-Term Strategy	Diversification strategies are occurring throughout the seafood sector and look different across geographies and supply chain nodes.
2. Investment in "Buffers" to Build Resiliency	Individuals and companies that successfully pivoted their business models to survive during COVID-19 often had cashflow and access to financial resources, physical assets (such as equipment, inventory, quota), and/or strong networks and diverse partnerships.
3. Fisheries and Seafood Are Going High Tech	The growing trend to leverage technology to improve management and consumer access to verifiably safe seafood surged in the wake of supply chain disruptions and limitations on in-person activities.
4. Increased Focus on Local and Domestic Markets	Across the supply chain, forces are pushing seafood actors to reconsider the role of domestic, and even hyper-local, seafood markets as a growth opportunity.

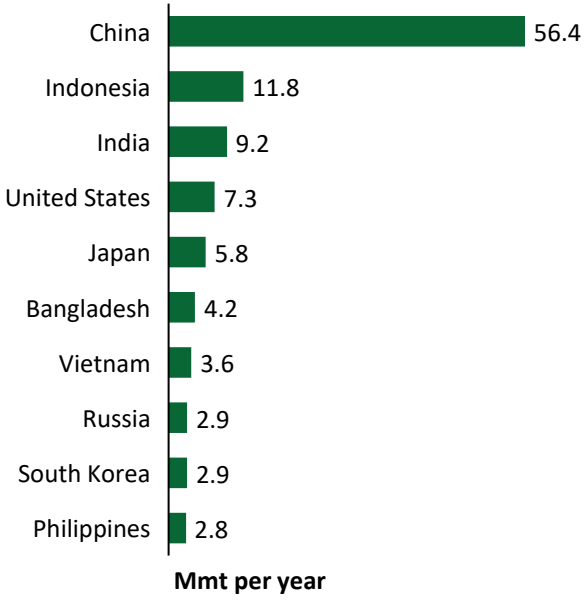
Sources: 1. NOAA, "U.S. Seafood Industry and For-Hire Sector Impacts from COVID-19: 2020 in Perspective," December 2021. 2. Future of Fish, "Global Impacts of the COVID-19 Pandemic on the Seafood Industry," November 2021. 3. OxFam, "Impacts of the COVID-19 Pandemic on Small-Scale Producers and Workers," June 2020.

Chinese seafood consumption is more than four times higher than that of Indonesia, the next largest consumer

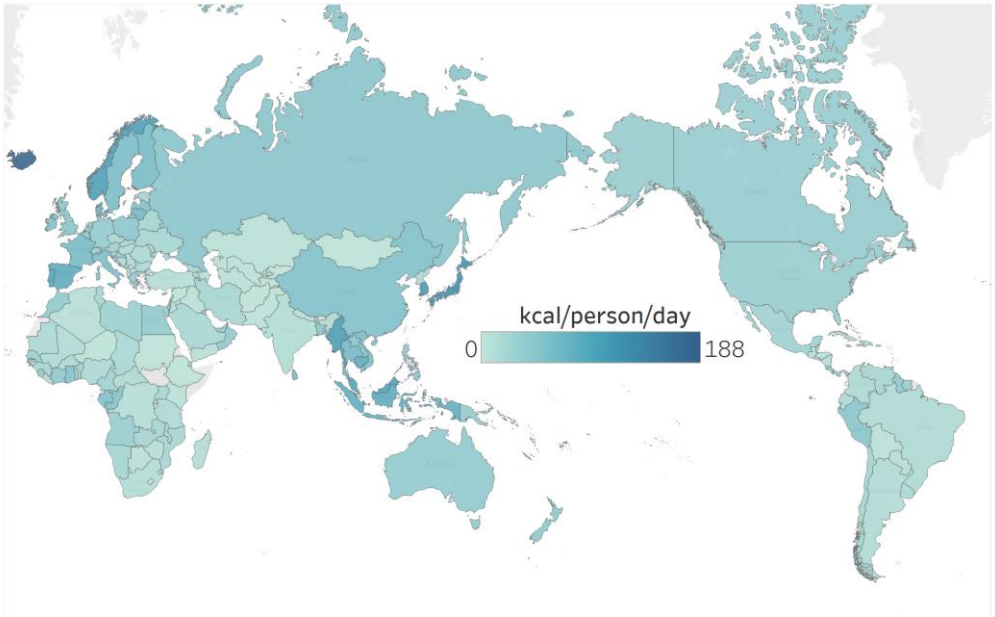
China has the largest national seafood consumption, the result of both above-average per capita consumption and a large population. Roughly 45% of its consumption consists of freshwater fishes, and another quarter is mollusks.

Per capita consumption is highest in small island nations, including Iceland, Maldives, and Kiribati, though their total consumption is relatively small. Western Europe, Northern Europe, Oceania, and Southeast Asia round out the remaining regions with the highest seafood consumption per capita.

Total consumption of seafood, 2019



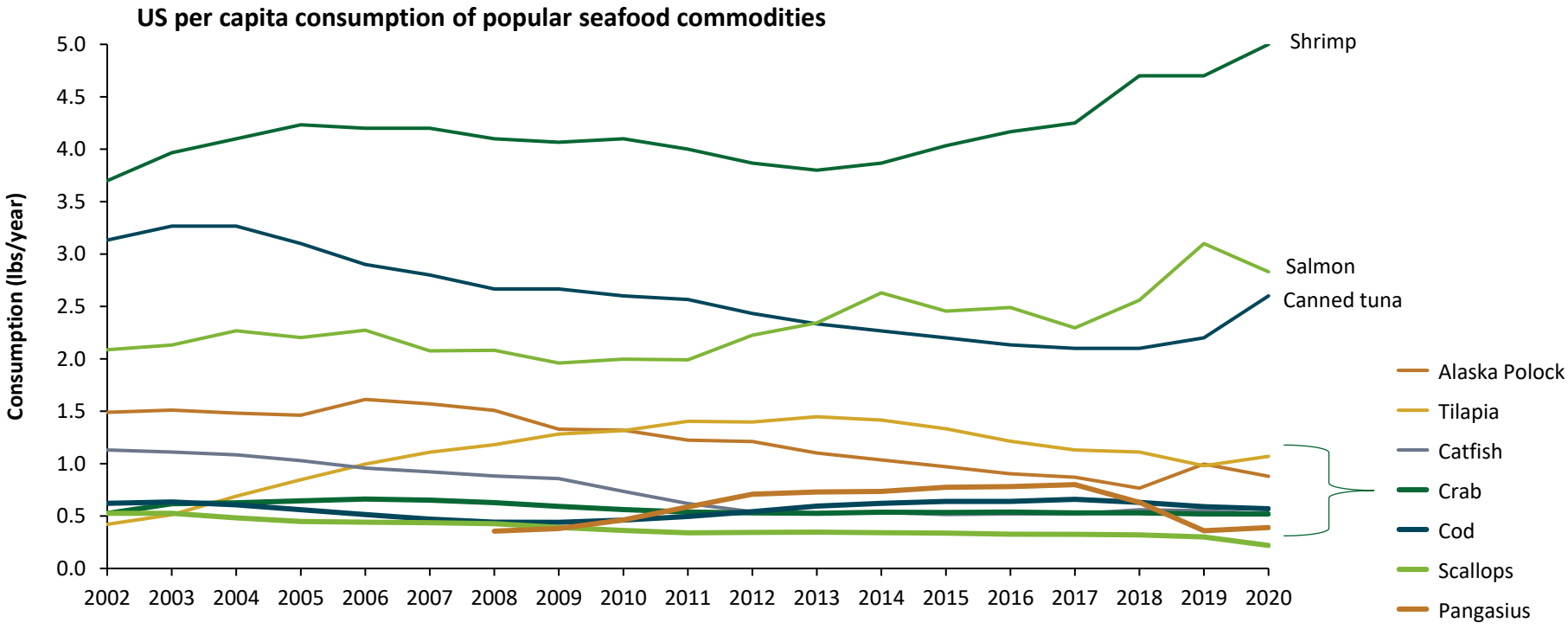
Per capita food supply from seafood (kcal/persons/day), 2019



Source: FAO Stat, "Food Balance Sheets," downloaded May 2022.

Shrimp and canned tuna consumption have been increasing since 2019, while salmon consumption fell during the COVID-19 pandemic

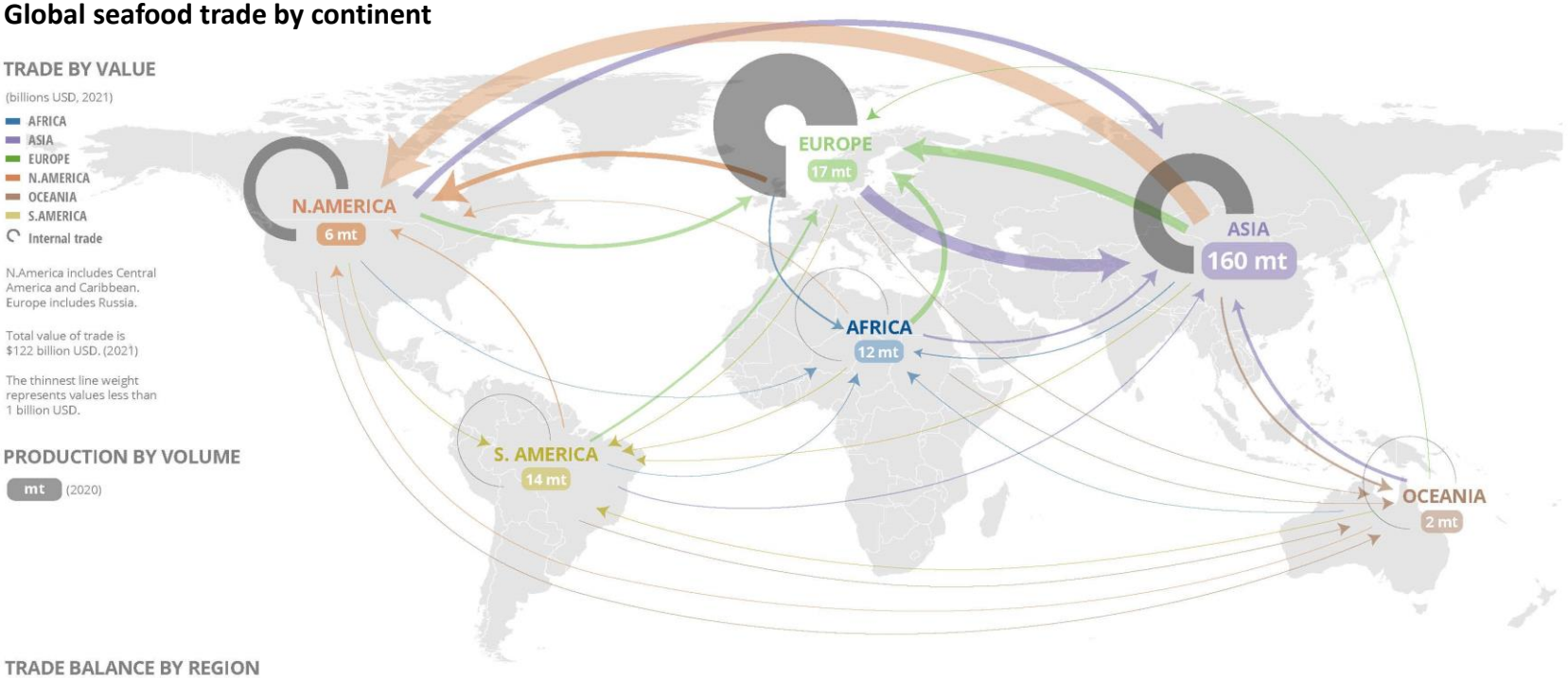
COVID-19 significantly disrupted seafood consumption patterns, as restaurants shuttered and retail purchases increased. Overall, seafood consumption per capita fell slightly from 19.3 lbs in 2019 to 19.0 lbs in 2020, led by decreases in salmon and Alaska Pollock consumption. Per capita meat consumption has increased over the same time period to 67 lbs of pork, 115 lbs of chicken, and 84 lbs of beef per person in 2020, though dietary shifts toward chicken consumption have driven the net increase while pork and beef consumption is in decline.



Sources: National Fisheries Institute, “Top 10 List for Seafood Consumption,” 2022; Kuck, G. and G. Schnitkey. "An Overview of Meat Consumption in the United States, May 12, 2021.

Asian exports of seafood to North America remain the highest flow of seafood trade globally

Global seafood trade by continent



TRADE BALANCE BY REGION

(millions USD, 2021)

N. America

	imports from	exports to
Africa	$365	$50
Asia	$13,921	$4,312
Europe	$3,570	$2,574
(internal)	$8,533	$8,533
Oceania	$382	$60
S. America	$645	$96

S. America

	imports from	exports to
Africa	$54	$9
Asia	$527	$701
Europe	$333	$1,294
N. America	$96	$645
Oceania	$7	$60
(internal)	$300	$300

Europe

	imports from	exports to
Africa	$3,701	$966
Asia	$6,590	$8,689
(internal)	$37,592	$37,592
N. America	$2,574	$3,570
Oceania	$418	$203
S. America	$1,294	$333

Africa

	imports from	exports to
(internal)	$538	$538
Asia	$685	$1,329
Europe	$966	$3,701
N. America	$50	$365
Oceania	$55	$43
S. America	$9	$54

Asia

	imports from	exports to
Africa	$1,329	$685
(internal)	$20,111	$20,111
Europe	$8,689	$6,590
N. America	$4,312	$13,921
Oceania	$2,045	$1,184
S. America	$701	$527

Oceania

	imports from	exports to
Africa	$43	$55
Asia	$1,184	$2,045
Europe	$203	$418
N. America	$60	$382
(internal)	$214	$214
S. America	$60	$7

Sources: TradeMap.org; FishstatJ.

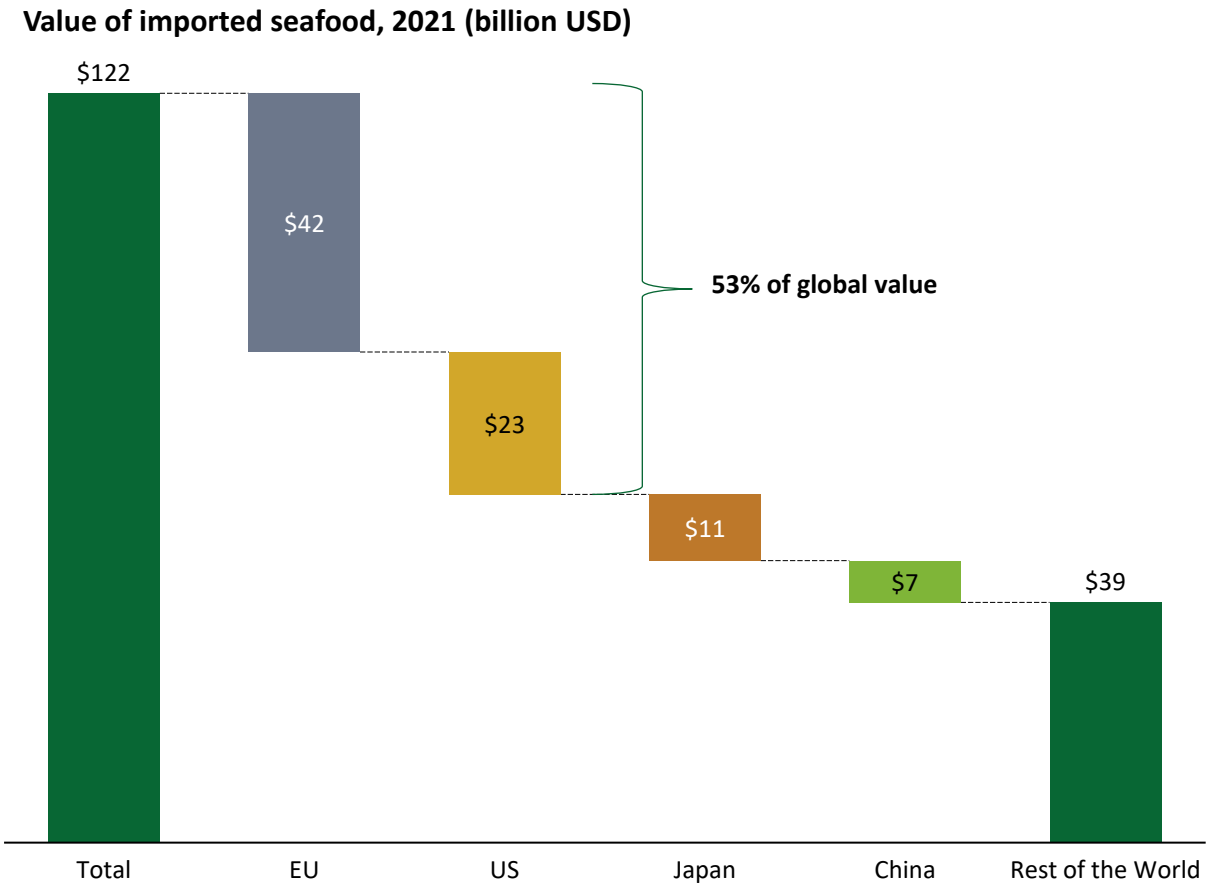
The EU and the US are the largest importers of seafood, accounting for more than half of global value, while China only accounts for 5.5% of imports by value

While decreasing in global share, the US and EU remain the highest-value importers of seafood, accounting for more than half (53%) of global imported value in 2019, totaling $65 billion.

One third of seafood by value is going to EU countries with a developed sustainability market, such as Germany, the Netherlands, Sweden, and Denmark. The other top importers are the Southern European countries of France, Spain, Italy, and Portugal.

Japan is the next largest consumer, at 9% of global import value. Japan primarily imports tuna and shrimp.

While China is the largest consumer of seafood globally, its large domestic production and lower-value imports put it at 5.5% of global import value.

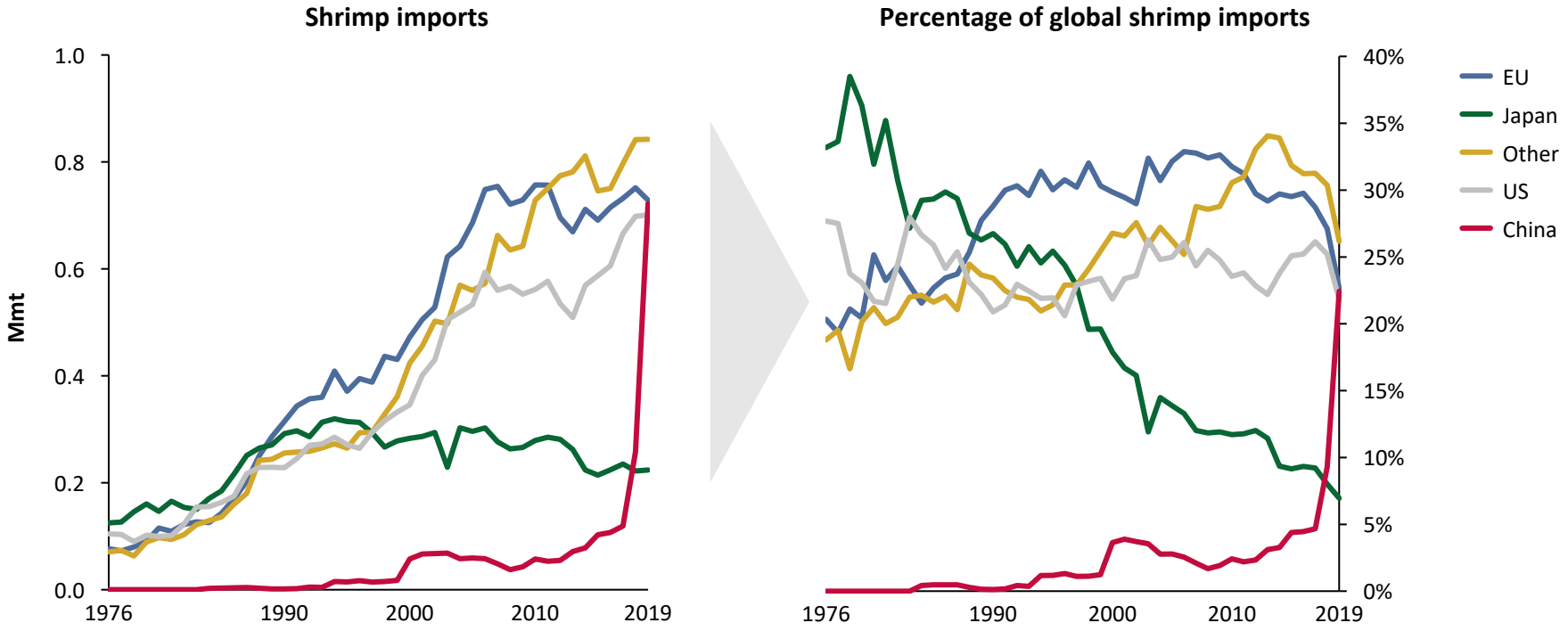


Source: TradeMap.org.
Note: EU excludes the United Kingdom.

Commodity of interest – shrimp

The US, EU, and Japan historically imported between 60% and 70% of globally traded shrimp, but this share has declined since 2018 as China's reported shrimp imports have expanded. Japan, once the largest importer, has fallen to less than 10% of global imports.

China's reported shrimp imports have grown six times over the last two years of reported data, from 118,000 tonnes in 2017 to 721,000 tonnes in 2019, due to historical underreporting of total volume. Outside of the EU, US, Japan, and China, South Korea is a top importing nation, reporting almost 100,000 tonnes in 2019.

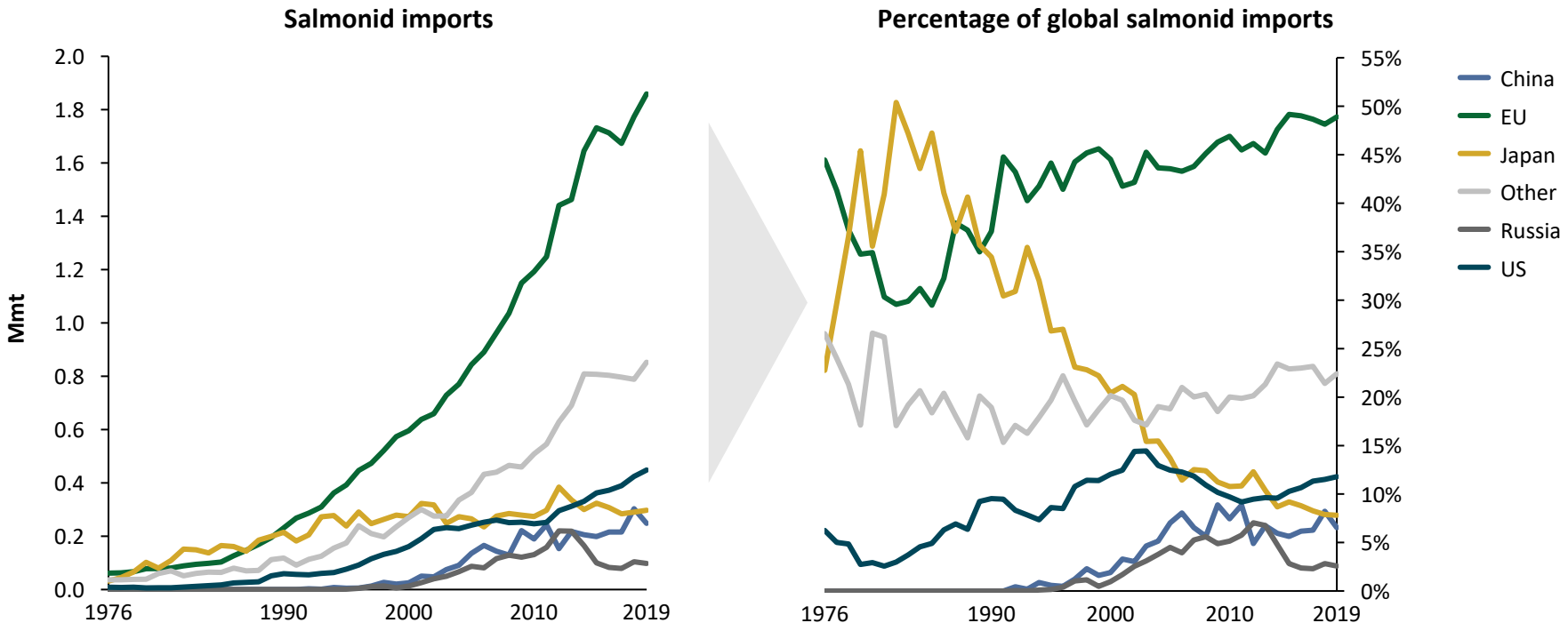


Source: FishStatJ.
Note: Not all imports reflect domestic consumption; in many cases, particularly in Asia, product may be imported, processed, and subsequently re-exported.

Commodity of interest – salmonids

The EU remains the top salmonid importer, at nearly half of total imports and increasing, though this is inflated by intra-EU trade for processing. Within the EU, Sweden is responsible for 30% of salmonid imports.

The US has also continued its climb, surpassing Japan to be the second-highest salmonid importer. China and Russia both had increasing shares of global imports until the early 2010s and have since declined in share of global imports.

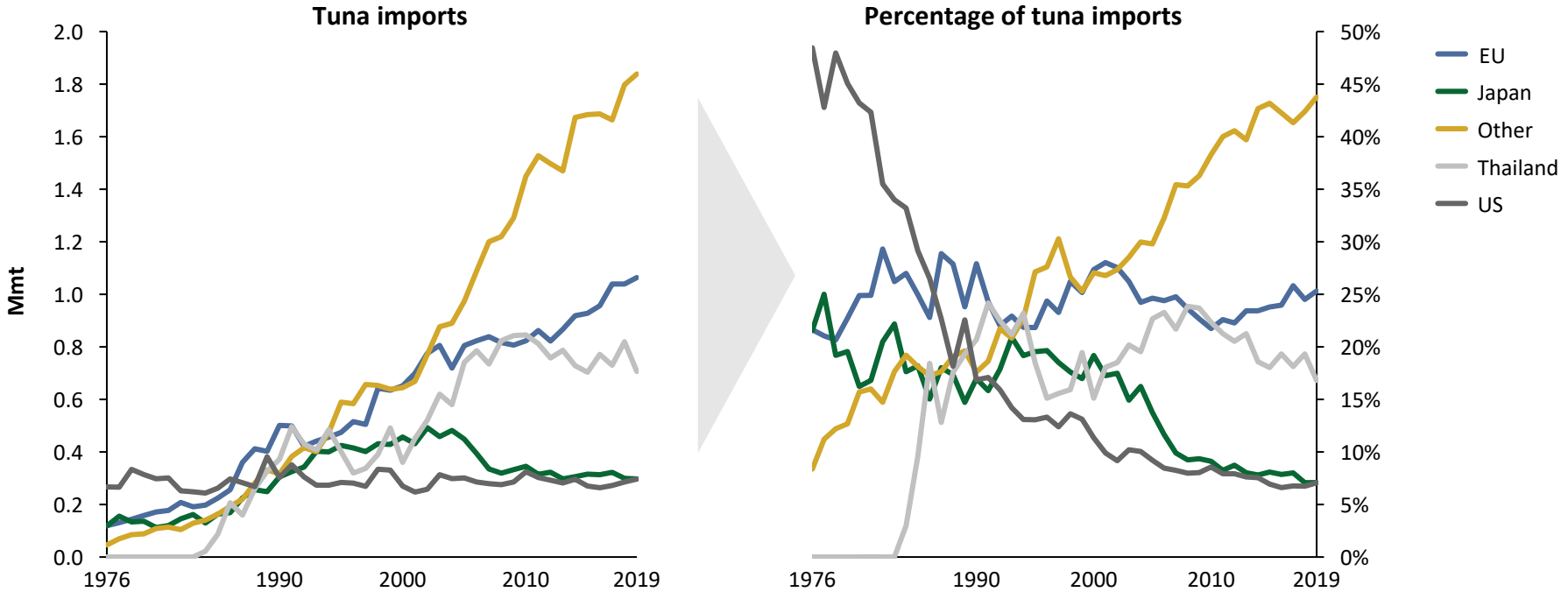


Source: FishStatJ.
Note: Not all imports reflect domestic consumption; in many cases, particularly in Asia, product may be imported, processed, and subsequently re-exported.

Commodity of interest – tuna*

Tuna imports to countries outside the US, the EU, and Japan more than doubled in the two decades leading up to 2019, again driven in part by imports for processing canning (e.g., Thailand). EU imports also grew, though less dramatically, while imports into the US and Japan have remained relatively stable in recent years.

Outside of the EU, Japan, Thailand, and the US, the Philippines and Vietnam are top tuna-importing countries. Tuna is also imported in high quantities by several African nations that host major tuna-processing factories, including Mauritius, Côte d'Ivoire, and Seychelles.



* Includes billfishes and bonitos.

Source: FishStatJ.

Note: Not all imports reflect domestic consumption; in many cases, particularly in Asia, product may be imported, processed, and subsequently re-exported.

BUSINESS RELATIONSHIPS & SUPPLY CHAIN ENGAGEMENT

Key takeaways

- The World Benchmarking Alliance's Seafood Stewardship Index found that two-thirds of global seafood companies are making progress against environment, social, and governance indicators, though overall performance remains low.
- After seeing success in the US retailer landscape and releasing the US Food Service Sustainability Scorecard, Greenpeace published the 2021 Tuna Retailer Scorecard. This scorecard found that tuna retailers scored worse on human and labor rights aspects of sourcing than environmental aspects, which were weighted equally for the first time.
- In 2021, CEA scanned the sustainable seafood precompetitive platform landscape and found that 376 companies were engaged in 16 precompetitive collaborations. Most surveyed platforms (n=11) are at least partially philanthropically supported. Among engaged companies, 15% are also engaged in NGO partnerships. Retailers, suppliers, and distributors primarily make up platform membership, and North American and European companies represent more than 75% of the platform members.
- More than 85% of the top US, Canadian, and European retailers have commitments to sustainable seafood, with no significant commitment changes since 2020. Seafood Legacy Foundation supports the growth of commitments by Japanese retailers.
- Beyond the existing commitments from top North American and European retailers, progress in new commitments remains limited: two contract catering companies made commitments to sustainable seafood since 2020, while there was no major progress in fast food, casual dining, hospitality, and pet food.
- Since 2020, CEA has tracked independent seafood commitments where possible (as opposed to only one-on-one Alliance NGO partnership commitments). But our ability to verify a company's independent sustainable seafood commitment remains limited.
- Industry has started to make commitments to social responsibility in seafood. This is a major new trend for the movement, discussed further in the "Social Responsibility" section.

METRICS INCLUDED:

WBA SSI & Greenpeace ranking

Precompetitive platforms

Corporate-NGO partnerships

New commitments from top mid-supply chain and major buyer companies largely plateau while engagement in precompetitive collaborations grow

North American and European retailers have committed to sustainable seafood more than any other geographies and supply chain segments, although commitments are emerging in the Japanese supply chain as well. While commitments do exist across almost each supply chain segment, some companies are committing through NGO partnerships and others through independent commitments. Companies with and without commitments are also engaging in sustainable seafood precompetitive collaborations. It is difficult for the seafood markets community to assess the quality and understand the progress being made against all types of commitments and engagements (e.g., lack of clarity on depth and breadth of commitments, implementation not publicly disclosed). However, initiatives such as the World Benchmarking Alliance's Sustainable Seafood Index are pushing for more transparency and accountability.

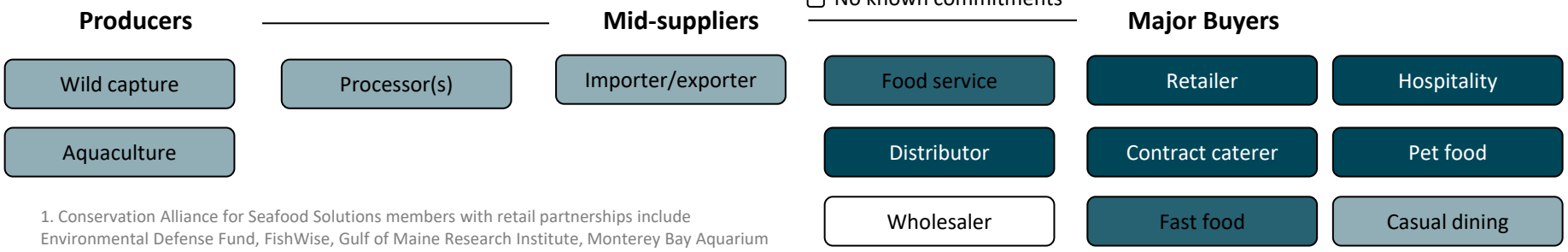
The following slides focus on wild-seafood commitments involving partnerships with Conservation Alliance NGO members,[1] as well as independent commitments and engagement in precompetitive collaborations.

Since 2020, notable new NGO-partnership commitments include two North American contract catering companies, in addition to new commitments from companies with smaller market shares. In addition, companies made strides to commit to social responsibility. The COVID-19 pandemic also caused challenges for certain sectors, like food service.

Commitments can take many forms; the most common include 1) pledges to source from fisheries that are certified (e.g., MSC, ASC, BAP), Seafood Watch "Best Choice" or "Good Alternative," GSSI recognized, or engaged in FIPs and 2) commitments to traceability and chain of custody. Additionally, some companies are committed to Target 75 (T75),[2] launched by SFP "to ensure that 75% of seafood (by volume) in 13 key sectors is either sustainable or making regular, verifiable improvements" through participation in supply chain roundtables and other precompetitive collaborations.

Sustainable seafood commitment penetration

- Major commitments (>50% of market share)
- Significant commitments (>20% of market share)
- Some commitments
- No known commitments



One company may play multiple roles

1. Conservation Alliance for Seafood Solutions members with retail partnerships include Environmental Defense Fund, FishWise, Gulf of Maine Research Institute, Monterey Bay Aquarium Seafood Watch, New England Aquarium, Ocean Wise, SFP, and WWF. 2. For more information, see SFP's Target 75.

After developing a five-year strategic plan, the Conservation Alliance for Seafood Solutions is working toward a new 2030 goal

The Conservation Alliance for Seafood Solutions (the Alliance) aims to promote environmentally sustainable and socially responsible seafood production. It convenes a Global Hub community that represents more than 120 organizations across 24 countries working together to improve the sustainability and responsibility of seafood supply chains.

The Alliance aims for 75% of global, commercial seafood production to be environmentally responsible or making verifiable improvements with social safeguards in place by 2030.

The Alliance is revising the Guidelines for Supporting Fishery Improvement Projects, which encourage FIPs to uphold labor rights and embrace social responsibility, economic responsibility, and financial viability. In addition, the Alliance Guide to Tools & Resources is a resource for seafood companies, NGOs, and academics to align efforts and limit redundancy in the creation of future initiatives.

Alliance goals for 2022 and 2023:

- Continue to grow and convene Alliance Global Hub membership to accelerate and increase collective impact.
- Release a new collaboration tool, SeaHive, to connect people and projects across the responsible seafood movement.
- Author a high-level vision to clarify the "north star" for responsible seafood.
- Create guidelines for companies to help align NGO and industry efforts on commitments, progress, and disclosure, increasing the amount of available information and streamlining asks.
- Continue to engage the Global Hub in diversity, equity, and inclusion conversations and apply that lens to all Alliance project planning and operations.

The Conservation Alliance's Strategic Plan, 2020-2024[1]

Scope	**The commercial production of seafood worldwide**
Vision	**A world with an abundance of seafood in an environment where workers, communities, and our ocean all thrive**
10-Year Goal	**By 2030, at least 75% of global seafood production is environmentally responsible or making verifiable improvement and safeguards are in place to ensure social responsibility**
Approach	**Accelerate and increase the collective impact of our community**

1. For more information, see the Conservation Alliance Strategic Plan.
Source: Communication with Meaghan Hudgins and Mariah Boyle, Conservation Alliance for Seafood Solutions, April 2022.

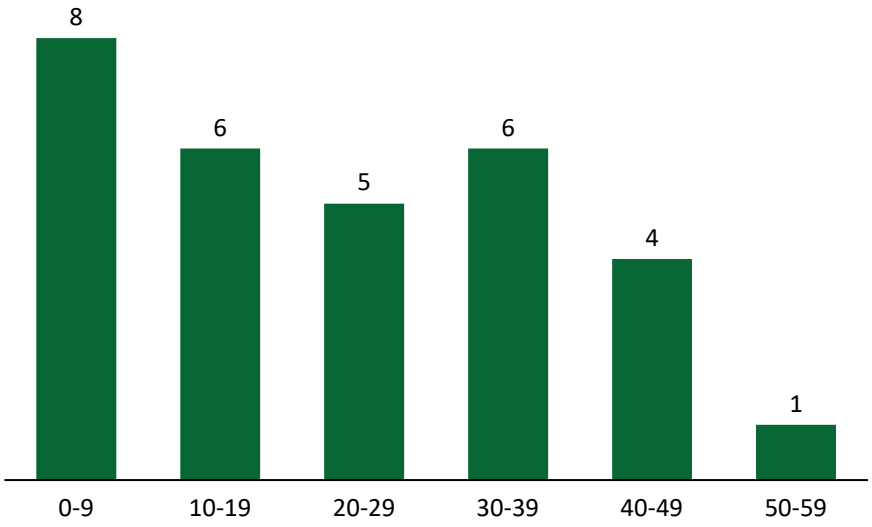
The 2021 SSI finds that two-thirds of global seafood companies are making progress against environment, social, and governance indicators, though overall performance remains low

The World Benchmarking Alliance's (WBA) 2021 Seafood Stewardship Index (SSI) evaluated the performance of the 30 largest seafood companies in the world against key social responsibility, governance, ecosystem, and traceability indicators. For the second time, Thai Union received the highest SSI score. The Thai food processor achieved this result through its top performance in the social responsibility measurement area. Even though two-thirds of companies demonstrate at least one leading practice in one of the measurement areas, overall performance remains low. Half of the companies do not reach an overall score of 25 out of 100, and the average score for each measurement area is around 30 out of 100.

Other notable findings from the report include:

- Though they have strong focuses on environmental or traceability priorities, company commitments lack time-bound targets.
- There is a general lack of alignment on how companies report progress and define their environmental commitments.
- 40% of companies provide traceability standards, but only 30% included information on how data are collected and verified.
- Just 50% of companies disclosed a commitment to protect human rights that applies to their operations and supply chains.

Number of companies per score band (out of 100)



Source: WBA, "2021 Seafood Stewardship Index: Insights Report," April 2022.

Top 10 Company Rankings

Rank	Company Name	Score (out of 100)
1	Thai Union Group	51.9
2	Mowi	46.1
3	Nueva Pescanova	42.9
4	Nomad Foods	42.7
5	Nutreco (Skretting)	40.1
6	Cargill	39.5
7	Austevoll Seafood	36.1
8	BioMar	35.8
9	Charoen Pokphand Group	35.5
10	Royal Greenland	34.0

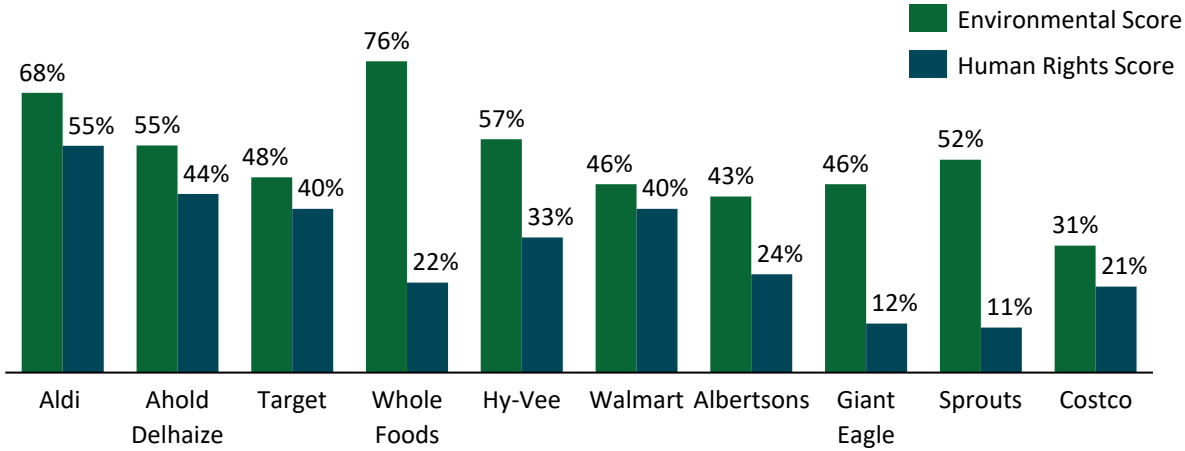
Greenpeace's 2021 Tuna Retailer Scorecard finds companies are improving the environmental sustainability of their tuna supply chains, while their human rights performance lags

Greenpeace's 2021 Tuna Retailer Scorecard invited top retailers to complete a survey seeking to understand companies' tuna sourcing and supply chain policies. In contrast to previous years' retail scorecard efforts, this survey equally weighted questions related to human rights and environmental aspects of sourcing.

At a high level, companies performed relatively poorly on the human rights survey. While 90% of invited companies completed the environmental portion of the survey, just 56% of the companies opted to complete the human rights survey. Large brands, including Whole Foods, Aldi, and Hy-Vee, performed well on environmental indicators, but fell short of a "passing grade" (60%) for their human rights work. As a result, none of the retailers received a passing score. Companies that performed well on human rights tended to be larger—Aldi, Ahold Delhaize, Target, and Walmart—while the bottom four—Southeast Grocers, Meijer, Publix, and Wegmans—are smaller, regional retailers.

Overall Rank	Company Name	Total Score
1	Aldi	59.77%
2	Ahold Delhaize	52.8%
3	Target	47.92%
4	Whole Foods	46.45%
5	Hy-Vee	42.92%
6	Walmart	42.74%
7	Albertsons	34.34%
8	Giant Eagle	25.93%
9	Sprouts	25.5%
10	Costco	24.29%

Environmental and human rights scores across top 10 performing tuna retailers, 2021



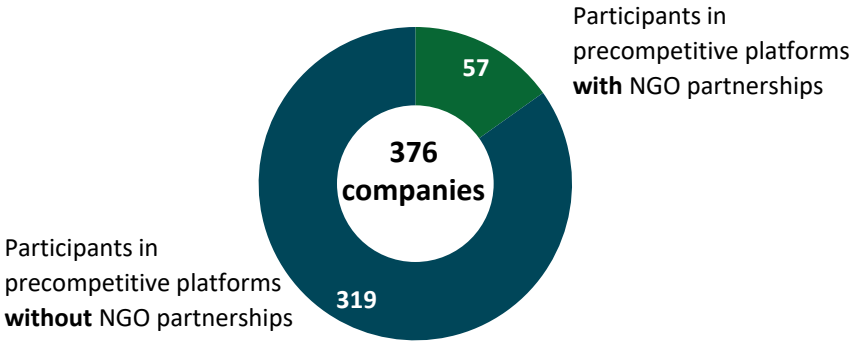
Source: Greenpeace, "The High Cost of Cheap Tuna: US Supermarkets, Sustainability, and Human Rights at Sea," 2021.

Sixteen precompetitive platforms, funded by industry and philanthropy, engage almost 400 seafood companies

CEA's 2021 Landscape Review of Sustainable Seafood Precompetitive Collaborations found that platforms cover a wide variety of species, including tuna, salmon, shrimp, and crab, as well as cross-cutting issues and supply chain sectors. Almost 400 companies are engaged in 16 precompetitive collaborations, up from 250 companies engaged in 12 platforms in 2018. New platforms joining the landscape since 2018 include the Global Tuna Alliance, Hong Kong Sustainable Seafood Coalition, Seafood Ethics Action Alliance, and Sustainable Shrimp Partnership.

Precompetitive collaborations have several different funding models, the most common of which is receiving both philanthropic and industry financial support. Most platforms (n=11) receive some type of philanthropic support.

Companies engaged in precompetitive platforms in 2021



Four kinds of platform archetypes emerged from the review, reflecting differing priorities, types of members, and levels of supply chain engagement. These archetypes are not mutually exclusive, and platforms often embody multiple archetypes.

Nonexclusive platform archetypes

Platform type	Example Platforms
Knowledge-sharing entities: Share information and consult companies on sustainable seafood policies	Food Service Roundtable, FMI Seafood Strategy Committee
Commitment-oriented platforms: Set targets (both time-bound and not) and measure progress against some evaluative criteria	Seafood Task Force, Sustainable Shrimp Partnership
Project funders: Prioritize progressing AIPs/FIPs and other projects on the water	National Fisheries Institute Crab Council, SFP Supply Chain Roundtables
Scientific research bodies: Collect data, collaborate with academic institutions to produce research outputs for participating companies and broader community	ISSF, SeaBOS

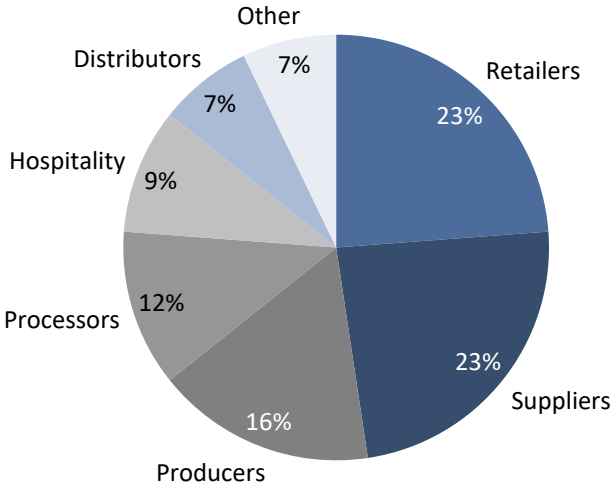
Source: CEA, "Landscape Review of Sustainable Seafood Precompetitive Collaborations," 2021.

Suppliers and retailers were the most-represented supply chain segments in surveyed precompetitive collaborations; companies in Western geographies represented the majority of member companies, and government advocacy continues to be a major priority for almost all platforms

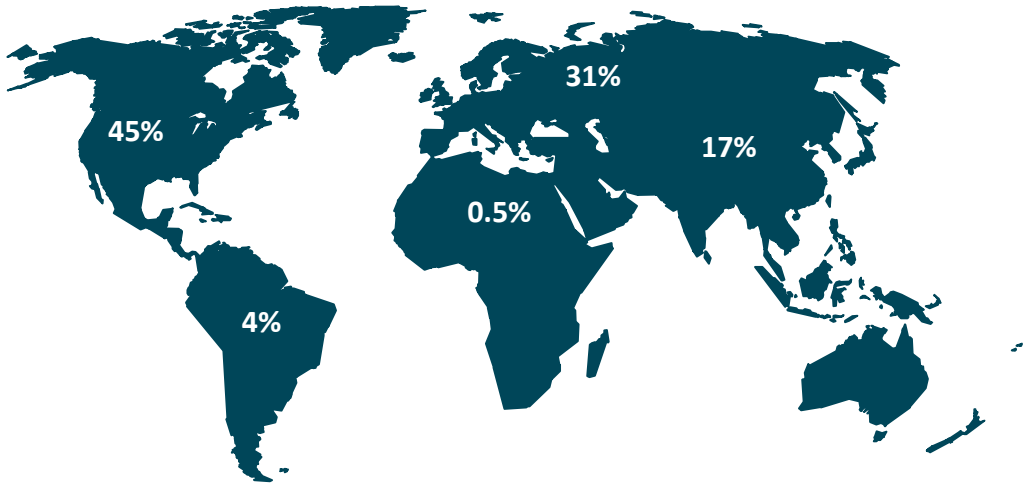
CEA's Landscape Review determined that a wide variety of supply chain segments and geographies are represented in the precompetitive collaboration landscape. Of all participating companies that were surveyed, retailers (23%) and suppliers (23%) were the most represented. In terms of geography, North America and Europe represented more than 76% of member companies across the surveyed platforms.

Fifteen of the 16 surveyed platforms engage in some type of collective government advocacy. Examples of platform-driven advocacy include publishing joint position statements with other platforms, engaging in letter-writing campaigns, and providing data and/or strategic recommendations to government officials. Despite the demonstrated impact of platform advocacy, it is challenging to draw explicit outcomes from these activities due to surrounding political and economic factors.

Retailers and suppliers are the most represented in the precompetitive platform landscape



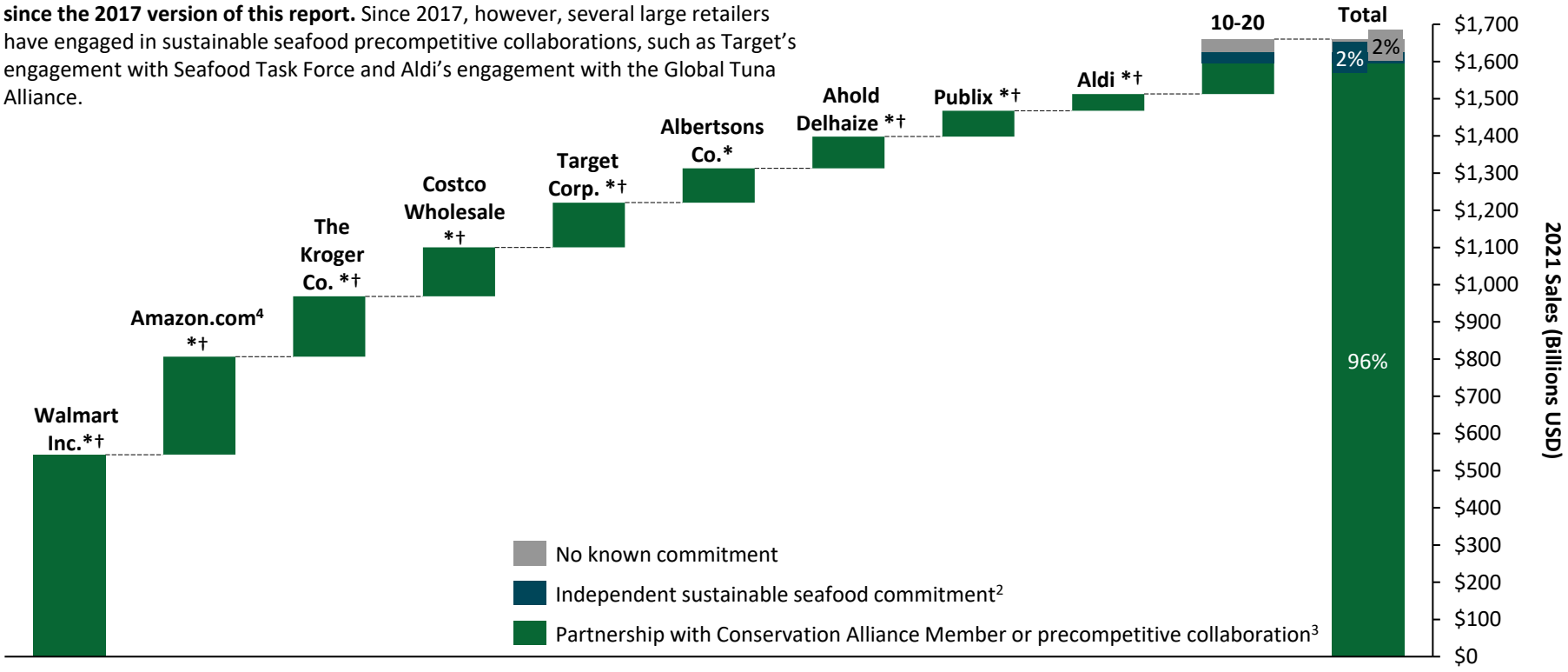
North America and Europe represent 76% of member companies across surveyed platforms



Source: CEA, "Landscape Review of Sustainable Seafood Precompetitive Collaborations," 2021.

More than 90% of the North American retail market is covered by buyer partnerships with Alliance NGOs or engagements with sustainable seafood precompetitive collaborations

There were no new commitments or new North American retailer partnerships since the 2017 version of this report. Since 2017, however, several large retailers have engaged in sustainable seafood precompetitive collaborations, such as Target's engagement with Seafood Task Force and Aldi's engagement with the Global Tuna Alliance.

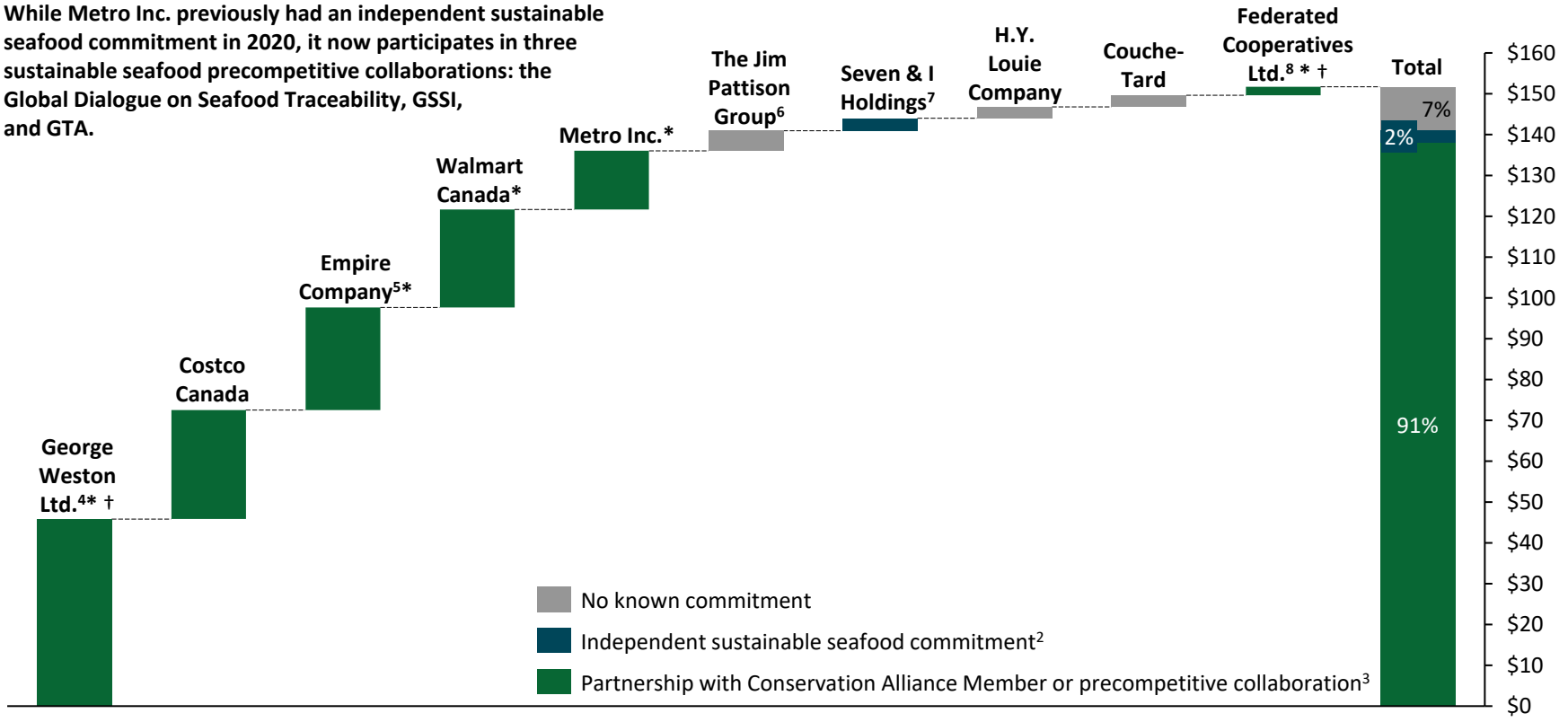


Top 10 North American Retailers[1] – Total Sales (Billions USD)

* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Companies included in this list are those that sell seafood.
2. Retailer has a dedicated webpage for seafood sustainability, describing sourcing commitments.
3. Retailer has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions or a sustainable seafood precompetitive collaboration.
4. Total sales includes Whole Foods, which has a partnership with Seafood Watch.
Source: National Relief Federation, "Top 100 Retailers 2021 List," 2021. Partnership data received in March 2022.

In Canada, five of the top 10 retailers, representing more than 90% of the retail market, are engaged in NGO partnerships or sustainable seafood precompetitive collaborations

While Metro Inc. previously had an independent sustainable seafood commitment in 2020, it now participates in three sustainable seafood precompetitive collaborations: the Global Dialogue on Seafood Traceability, GSSI, and GTA.

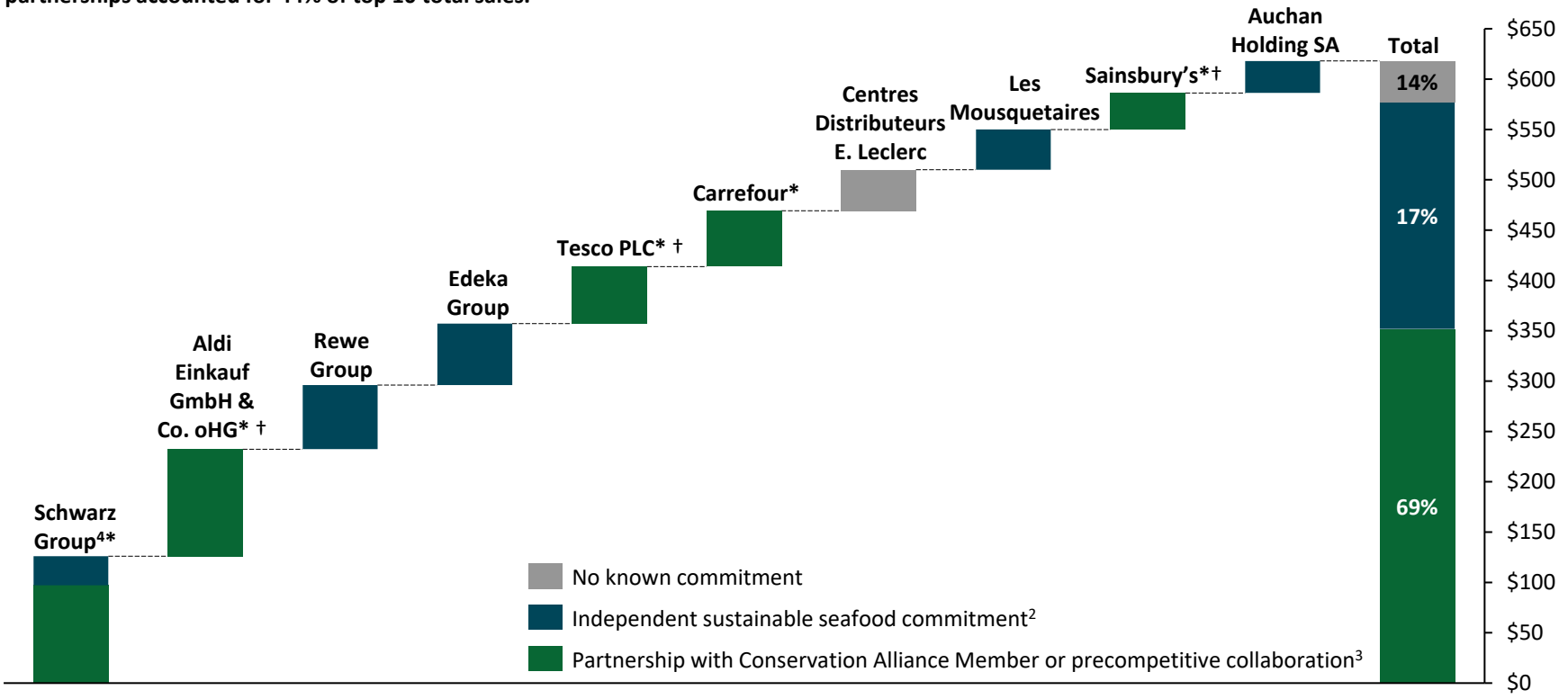


Top 10 Canadian Retailers[1] – Total Sales (Billions USD)

* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Companies included in this list are those that sell seafood.
2. Retailer has a dedicated webpage for seafood sustainability, describing sourcing commitments.
3. Retailer has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions or a sustainable seafood precompetitive collaboration.
4. Total sales include Loblaws, which has a partnership with WWF and is involved in GSSI.
5. Total sales include Sobeys, which has a partnership with WWF and Ocean Wise.
6. Total sales include AG Foods.
7. Total sales include 7Eleven, which has an independent sustainable seafood commitment.
8. Total sales include Coop, which has a partnership with WWF and is involved in GTA and SSC.
Source: The Centre for the Study of Commercial Activity, "CSCA Retail 100," 2019. Partnership data received in March 2022.

In Europe, total retail sales covered by partnerships and/or sustainable seafood precompetitive collaborations have not changed since 2020

Five EU retailers with sustainable seafood partnerships account for 68% of top 10 total sales, in contrast to 2017, when four retailers with partnerships accounted for 44% of top 10 total sales.

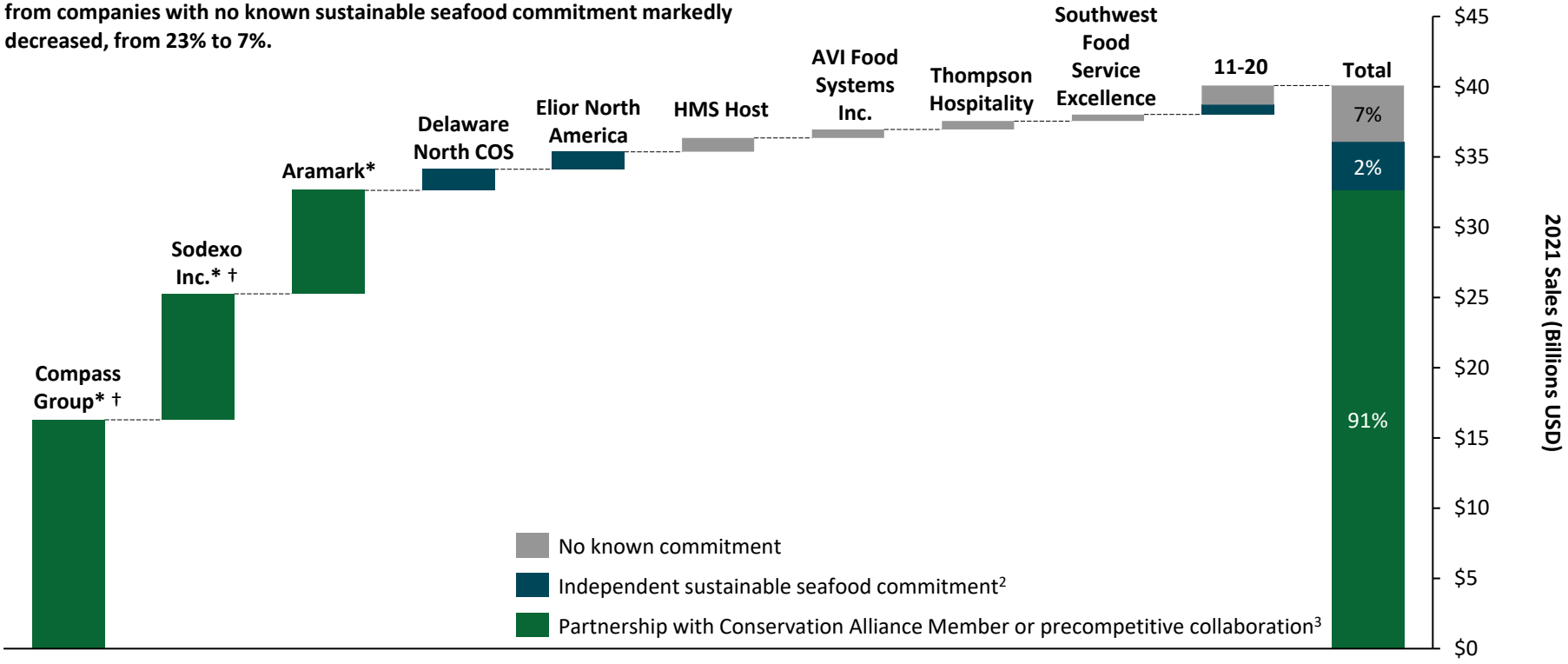


Top 10 European Retailers[1] – Total Sales (Billions EUR)

* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Companies included in this list are those that sell seafood.
2. Retailer has a dedicated webpage for seafood sustainability, describing sourcing commitments.
3. Retailer has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions or a sustainable seafood precompetitive collaboration.
4. Schwarz group subsidiary Lidl has an NGO partnership, and subsidiary Kaufland has an independent sustainable seafood commitment.
Note: Sales numbers represent total worldwide sales, which may include some stores located outside of Europe.
Source: Statista, "Leading Food and Beverage retailers in Europe as of 2019," 2019. Partnership data received in March 2022.

Of the top 10 North American contract catering companies, Delaware North and Elior North made new sustainable seafood commitments since 2020

Since 2020, the share of contract catering sales covered by buyer partnerships with Conservation Alliance NGOs or involvement in sustainable seafood precompetitive collaborations increased from 77% to 91%. In addition, the percentage of sales from companies with no known sustainable seafood commitment markedly decreased, from 23% to 7%.

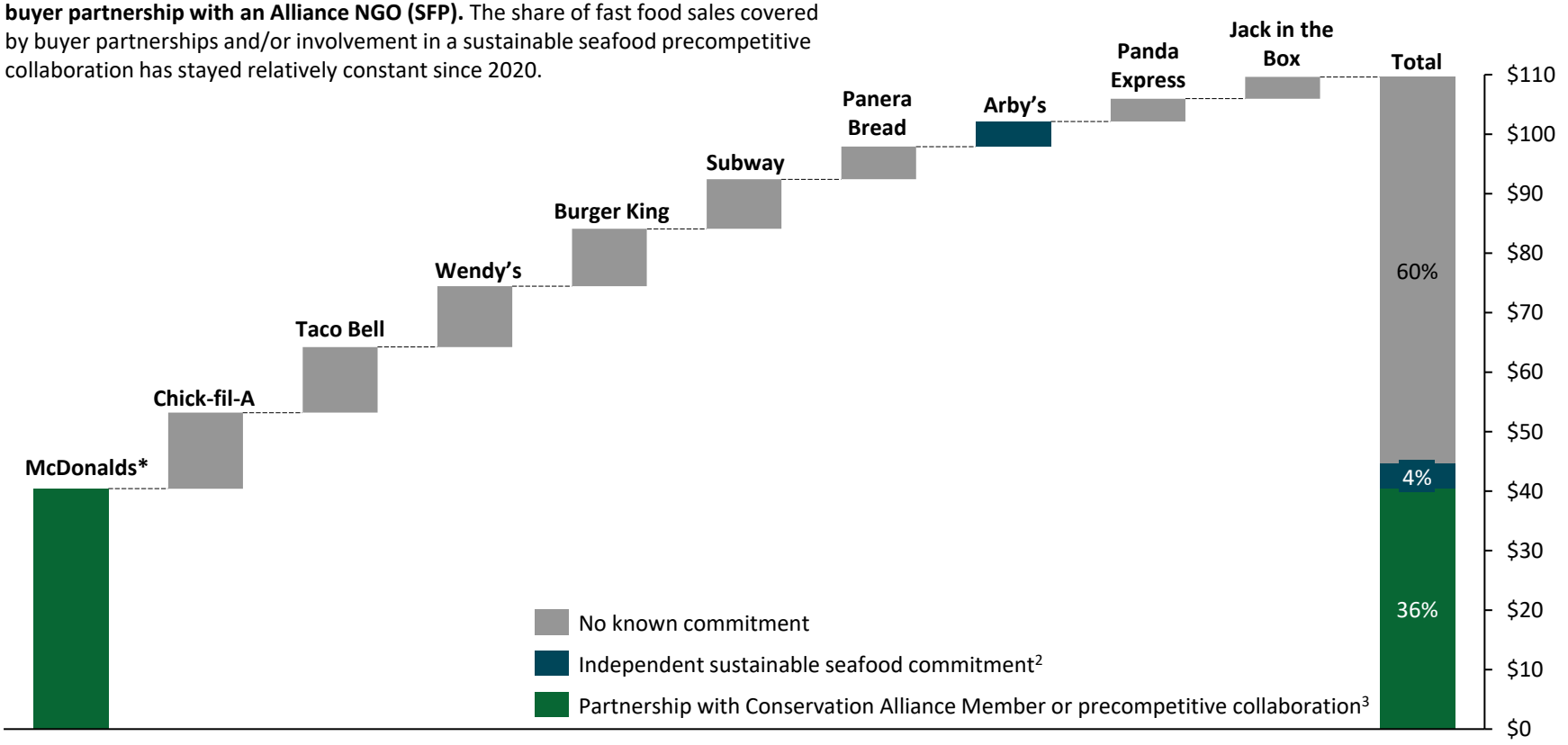


Top 20 North American Contract Caterers[1] – Total Sales (Billions USD)

* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Companies included in this list are those that sell seafood.
2. Company has a dedicated webpage for seafood sustainability, describing sourcing commitments.
3. Company has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions or a sustainable seafood precompetitive collaboration
Source: Food Management, "Meet the 2021 FM Top 50 Contract Management Companies," 2021. Partnership data received in March 2022.

Among the top 10 fast food restaurant chains in the US, only two have a sustainable seafood commitment

McDonalds remains the only major fast food restaurant chain in the US to have a buyer partnership with an Alliance NGO (SFP). The share of fast food sales covered by buyer partnerships and/or involvement in a sustainable seafood precompetitive collaboration has stayed relatively constant since 2020.

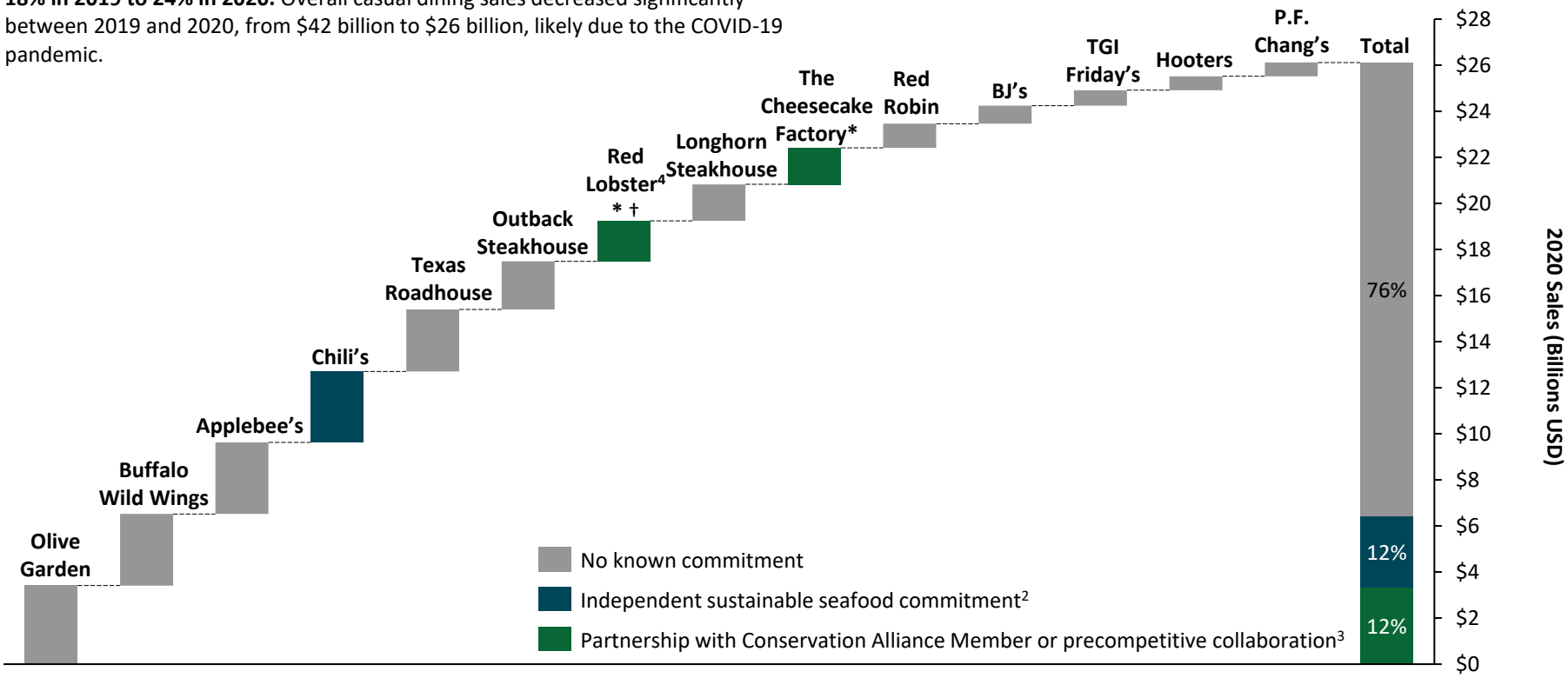


Top 10 US Fast Food Restaurants[1] – Total Sales (Billions USD)

* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Companies included in this list are those that sell seafood.
2. Company has a dedicated webpage for seafood sustainability, describing sourcing commitments.
3. Company has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions or a sustainable seafood precompetitive collaboration.
Source: QSR Magazine, "The QSR 50 Big Chart," 2021.
Partnership data received in March 2022.

Red Lobster and The Cheesecake Factory remain the only major casual dining restaurants with sustainable seafood NGO partnerships

The share of casual dining sales covered by independent sustainable seafood commitments or buyer partnerships with Alliance NGOs slightly increased, from 18% in 2019 to 24% in 2020. Overall casual dining sales decreased significantly between 2019 and 2020, from $42 billion to $26 billion, likely due to the COVID-19 pandemic.

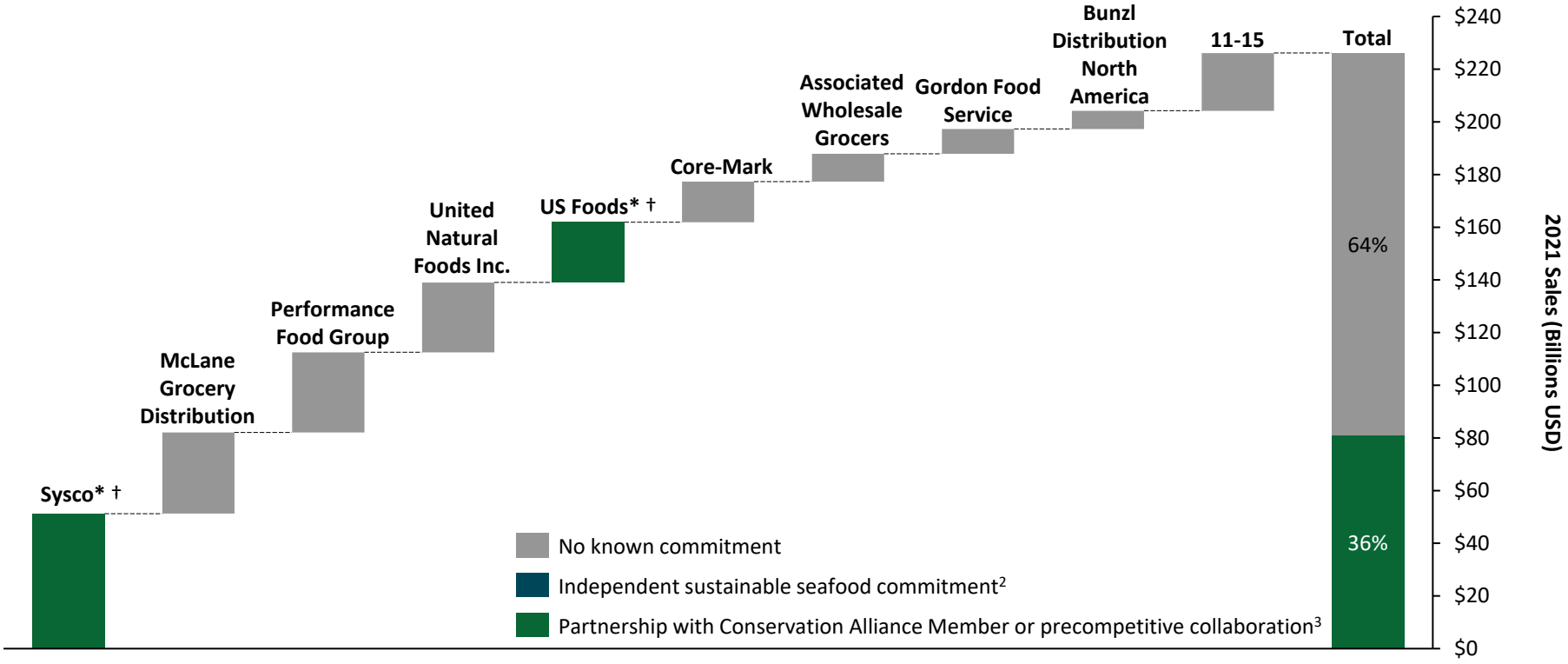


Top 15 Casual Dining Chains[1] – Total Sales (Billions USD)

* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Companies included in this list are those that sell seafood.
2. Company has a dedicated webpage for seafood sustainability, describing sourcing commitments.
3. Company has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions or a sustainable seafood precompetitive collaboration.
4. Red Lobster is a subsidiary of parent company Thai Union but has a separate partnership with WWF US.
Sources: Statista, "Sales of Selected Leading Casual Dining Restaurant Chains in the United States in 2020," 2021.
Partnership data received in March 2022.

There have been no new sustainable seafood commitments or buyer partnerships among the top North American distributors since 2020

Additionally, there remain no independent sustainable seafood commitments among the top North American food distributors.

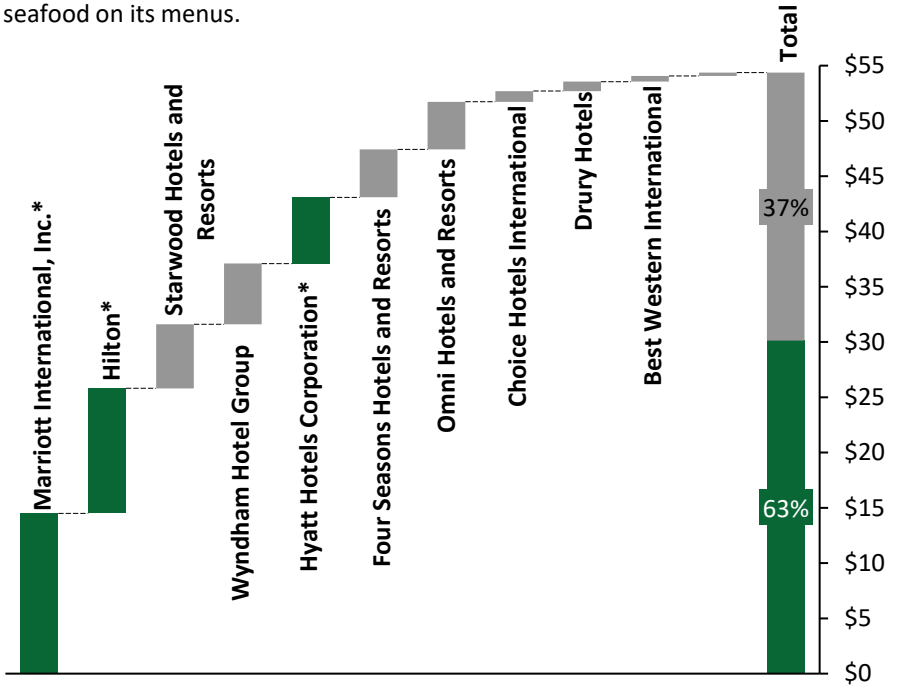


Top 15 North American Food Distributors[1] – Total Sales (Billions USD)

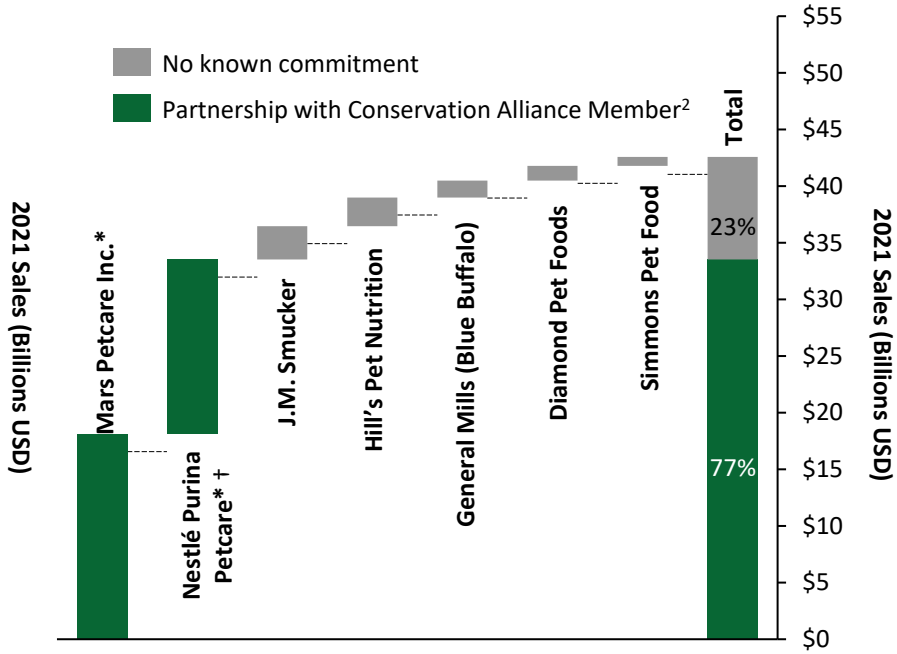
* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Companies included in this list are those that sell seafood.
2. Company has a dedicated webpage for seafood sustainability, describing sourcing commitments.
3. Company has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions or a sustainable seafood precompetitive collaboration.
Source: CSP Daily News, "The 2021 Distributor 15," 2021.
Partnership data received in March 2022.

The percentage of total sales covered by partnerships with sustainable seafood NGOs remains unchanged from 2020 for both the North American hospitality and global pet food industries

Three of the four largest North American hotel chains and the two largest global pet food manufacturers have partnerships with sustainable seafood NGOs. For both hospitality and pet food, the percentage of total sales covered by a partnership with a sustainable seafood NGO remains unchanged from 2020. Additionally, Walt Disney Parks and Resorts, the world's largest amusement park company, has partnered with SFP to serve sustainably sourced seafood on its menus.



Top North American Hotel Chains[1] – Total Sales (Billions USD)

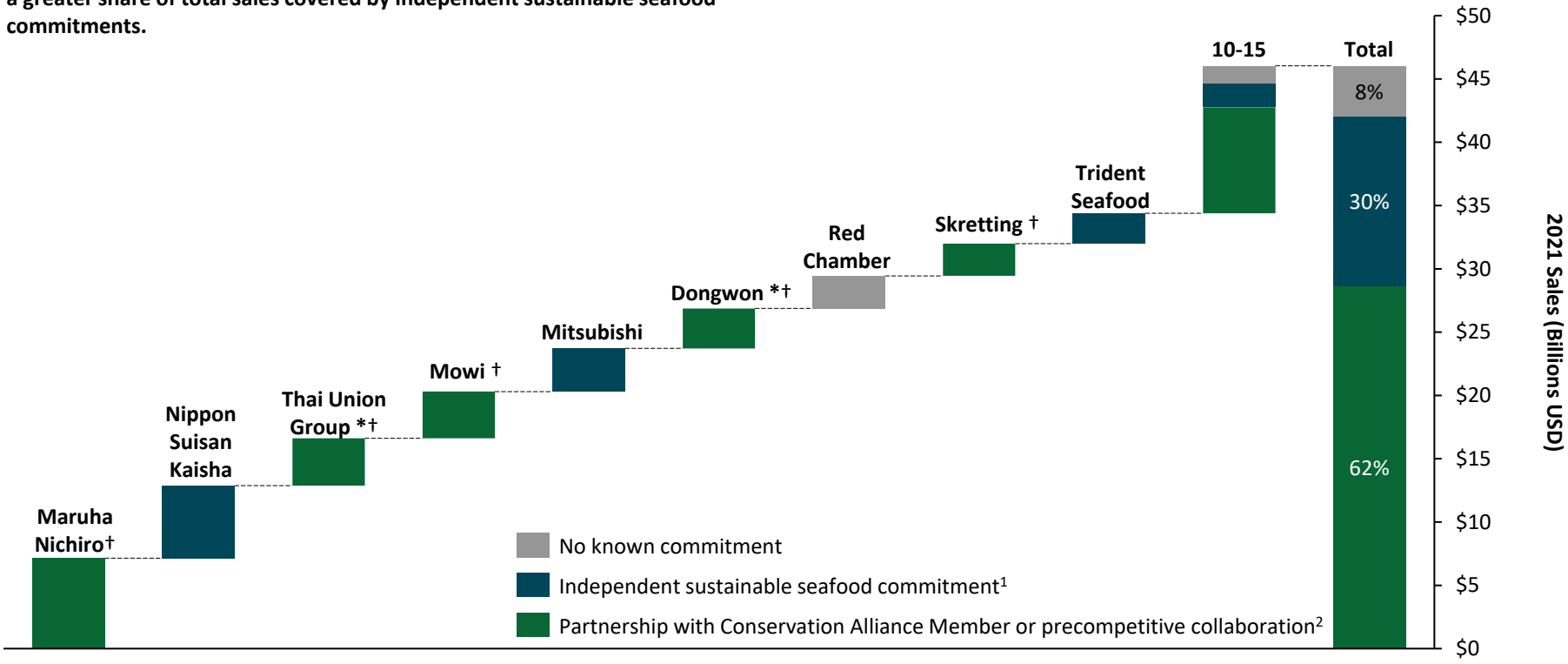


Top Global Pet Food Manufacturers[1] – Total Sales (Billions USD)

* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Companies included in this list are those that sell seafood.
2. Retailer has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions.
Sources: Insider Monkey; PetfoodIndustry.com.
Partnership data received in March 2022.

Almost all of the top 10 global seafood suppliers have a sustainable seafood commitment or engage in buyer partnerships and precompetitive collaborations

Compared to other supply chain segments, the global seafood supplier market has a greater share of total sales covered by independent sustainable seafood commitments.



Top 15 Global Seafood Suppliers – Total Sales (Billions USD)

* Company is engaged in a buyer partnership with a Conservation Alliance NGO.
† Company is involved in a sustainable seafood precompetitive collaboration.
1. Company has a dedicated webpage for seafood sustainability, describing sourcing commitments.

2. Company has an official partnership with an NGO member of the Conservation Alliance for Seafood Solutions or a sustainable seafood precompetitive collaboration.
Source: Zippia, "30 Largest Seafood Suppliers in the World," 2021.
Partnership data received in March 2022.

The Japanese market has grown its engagement of sustainable seafood through changes in fisheries regulations and new emphasis on social responsibility

As one of the largest demand markets for seafood globally, Japan remains a priority geography for the sustainable seafood movement. In December 2020, Japan passed a new law to prevent IUU-sourced seafood from entering the Japanese market, called the Improvement of Domestic Trade of Specific Marine Animals and Plants Act.

Retailers, Corporate Cafeterias, and Hotels

- The two largest Japanese retailers, Aeon and Seven & I Holdings, are continuing their seafood sustainability initiatives with time-bound procurement policies.
- The Japanese Consumers' Co-operative Union has updated its 2030 time-bound commitments and is a leading player in the Japanese sustainable seafood movement.

Social Responsibility

Policy Update

- The Ministry of Economy and Trade announced the First Meeting of the "Study Group on Guidelines for Respecting Human Rights in Supply Chains," which will draft cross-industry guidelines for human rights due diligence in 2022.
- The Fisheries Agency revised its Fishery Basic Plan, the government's five-year policy strategy for fisheries governance. In the new Basic Plan, adopted by the National Diet in March 2022, the human rights issue in the supply chain was addressed for the very first time in the Fisheries Agency formal document.

Market Update

- Under the SeaBOS platform, Nissui, Maruha-Nichiro, and Kyokuyo have developed human rights policies, placed on their websites.
- Most of the major retailers in Japan have also implemented policies and workplans regarding human rights issues in their supply chains. Visit Aeon and 7&i Holdings webpages for more information.

Fisheries and Distribution Companies

- Increasing demand for sustainable seafood from domestic end markets and the UN SDGs have been influencing major fisheries and seafood distribution companies in Japan.
- Maruha Nichiro, the world's largest seafood company group, conducted the first survey on the status of its sourced wild-caught fish.
- In addition to its SeaBOS commitment, Nissui, the second-largest seafood company group in the world, has conducted and announced its second survey on the status of the resources covering the wild-caught fish produced by the Nissui Group.
- The largest surimi company, Kibun, recently announced its commitment to source more than 75% of surimi ingredients from sustainability-certified ingredients, with 0% sourced from IUU-sourced ingredients, by 2030.

Laws and Regulations

- Japan's newly revised fisheries law, the Improvement of Domestic Trade of Specific Marine Animals and Plants Act, was passed in 2020. It redefines fishing regulations and resource assessment with the goal of achieving proper management of fishery resources and the resurgence of the fishing industry. The regulation includes import control rules to eliminate IUU-related seafood products from the Japanese market. The updated law was released in April 2022, and enforcement will begin in December 2022.

Source: Communication with Seafood Legacy, April 2022.

Japanese seafood companies across the value chain are working toward time-bound sustainability commitments and strong human rights policies

There is a growing movement for Japanese companies across the supply chain to develop sustainable seafood commitments. Currently, these commitments, some time-bound, vary in depth and breadth.

Three companies, Kokubu Group, Mitsubishi, and Nissui, have pledged to achieve their current seafood sustainability goals by 2030. Japanese company commitments are also increasingly focused on integrating human rights frameworks into business practices.

Company	Sector	NGO/Precompetitive Collaboration Engagement	Excerpt of Sustainable and Responsible Seafood Commitment Language from Website
Familymart	Retailer	N/A	Familymart's Sustainable Procurement Principle includes four aims, to: 1) Preserve biodiversity, minimize natural resource transactions, and eliminate fishing conducted illegally. 2) Reuse renewable resources to protect natural resources. 3) Secure the traceability of marine products and disclose information. 4) Comply with laws and social norms that advance a sustainable society together with producers and business partners.
Kokubu Group	Food Service	Seafood Legacy	Kokubu Group's commitment aims to increase the sales of its sustainably sourced products to 10 billion yen by 2030.
Kyokuyo	Processor	SFP SeaBOS	Kyokuyo's "2021 ESG Data Book" states that the company aims to create 13 new sustainable products that are MSC/ASC certified. This commitment covers all fresh, frozen, farmed, and aquaculture products.
Mitsubishi/ Toyo Reizo	Distributor	WWF SeaBOS Seafood Legacy	The Mitsubishi Group revised its commitment and aims to increase its total procurement of GSSI-certified bluefin tuna to at least 30% by 2030. The company pledges to avoid sourcing bluefin tuna produced in ways that contribute to the violation of human rights or labor rights, through the implementation of targeted and effective due diligence measures.
Nissui	Processor	SFP, GDST, GSSI, ISSF, SeaBOS, SSC	Nissui aims to achieve 100% sustainability of all marine products by 2030. Its 2020 Resources Sustainability Survey of wild-captured products concluded that 18% of products were sourced from well-managed fisheries, 53% from managed fisheries, and 8% from fisheries that need improvement; 21% had no FishSource score. In addition, the survey examined the breakdown of products by certification: 28% of products were certified by MSC, 10% by IFFO RS, 0.3% by Friend of the Sea, and 0.2% by Alaska RFM; 49% were not certified. An additional 12% were in FIPs reporting on FisheryProgress.

Source: Company websites.

CONDITIONS FOR BUSINESS CHANGE

Key takeaways

- Seafood mislabeling and fraud continues to be a health, economic, and conservation concern. A Guardian Seascape 2021 meta-analysis found that 36% of seafood globally is mislabeled, up from a finding of 20% in a 2018 Oceana study.
- After surpassing 2.1 million downloads in 2019 (a 67% increase in engagement from 2014), the Seafood Watch mobile application has transitioned to a website platform that enables users to access seafood recommendations even while offline.
- More than 40 seafood businesses across 10 countries publicly disclose their seafood sourcing through the Ocean Disclosure Project, which is focusing on expanding its presence in Asia and with food service companies.
- DWF fleets publicly trackable by Automatic Identification System (AIS) have grown 51% on GFW since 2016. Other for-profit and nonprofit traceability and transparency initiatives also operate vessel tracking systems.
- China, Taiwan, and Russia remain the worst-performing states as measured by the IUU Fishing Index, with China, Japan, and the US as the markets most vulnerable to IUU fishing.
- Ongoing community initiatives to track sustainable product and wild-capture fisheries continue to grow. More than 40% of products on FishChoice are MSC certified or rated Seafood Watch "Best Choice" or "Good Alternative." In addition, 41% of the global volume of fisheries, or 65% of fisheries on FishSource, are at least partially scored for stock status and management quality on FishSource.

METRICS INCLUDED:

Fraud and mislabeling

Traceability and transparency

Enabling businesses and initiatives

A 2021 Guardian Seascape analysis determined that 36% of tested seafood across 30 countries was mislabeled

A recent Guardian Seascape meta-analysis of 44 recent studies of more than 9,000 seafood samples from restaurants, fishers, and supermarkets in over 30 countries found that 36% were mislabeled.

Several of the studies examined suggested regional differences in seafood mislabeling. One study concerning fish labeled as "snapper" found that the United Kingdom and Canada had the highest rates of mislabeling, at 55% and 38%, respectively. While the incidence of seafood fraud does not mean all seafood products were deliberately mislabeled, most mislabeled fish were lower-priced fish replacing higher-value species.

In other cases, the substitutes were of endangered or less desired species. One of the studies analyzed determined that nearly 70% of samples across the UK sold as snapper were from 38 different species, including many reef-dwelling species already threatened by overfishing and habitat degradation. Similarly, one of the studies determined that nearly 48% of tested samples purporting to be king scallops in Germany were the less coveted Japanese scallops.

Seafood mislabeling is especially prevalent in the restaurant industry, with some of the highest restaurant mislabeling rates, ranging from 40% to 50%, in Spain, Iceland, Finland, and Germany. Ultimately, seafood fraud can undercut meaningful legal regulations and conservation efforts.

Average mislabeling rate by region in which studies were analyzed

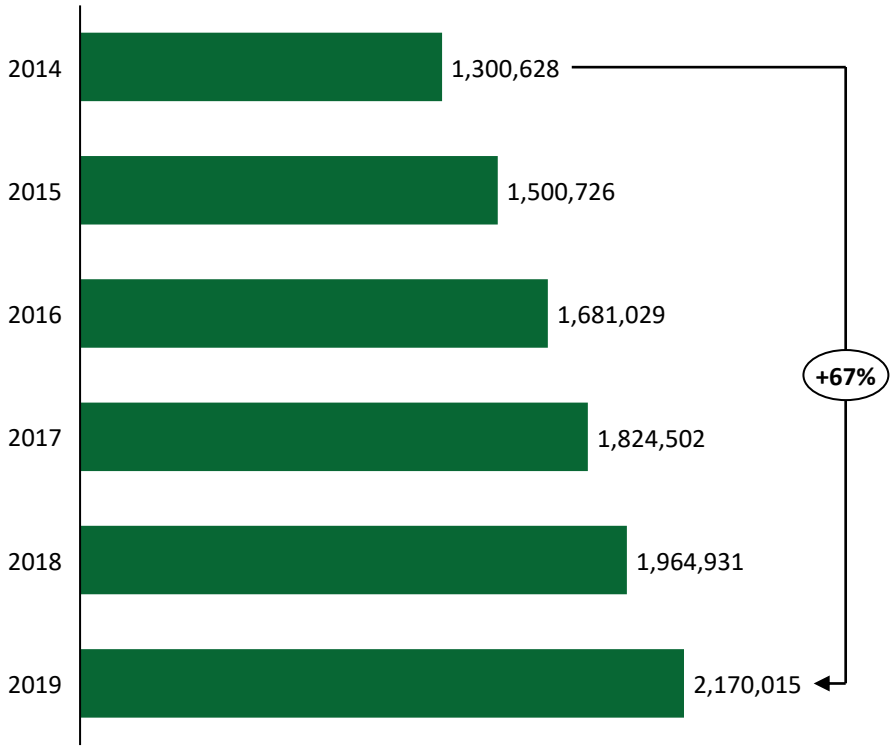
Source: *The Guardian*, "Revealed: Seafood Fraud Happening on a Vast Global Scale," 2021.

The Seafood Watch phone application transitioned to a website application after surpassing 2.1 million downloads

In 2020, Seafood Watch transitioned its mobile application to a website application, enabling users to access seafood recommendations even when offline. This shift means that users no longer can download a phone application. Web platform downloads are not tracked in a comparable way to mobile application downloads.

In 1999, Monterey Bay Aquarium began distributing Seafood Watch consumer guides and cards. Seafood Watch also previously encouraged businesses and partner institutions—the primary distributors of the guide—to promote the app through signage and other materials. In 2019, the app was downloaded more than 200,000 times. Outside of North America and primarily in the EU, Seafood Watch created 25 country-specific seafood guides for consumers, which were previously available as phone applications.

Cumulative downloads of Seafood Watch app, 2014-2019



Sources: Communication with Erin Hudson, Seafood Watch, April 2022; WWF Sustainable Seafood Guides.

Since launching as an online platform five years ago, the Ocean Disclosure Project has expanded its reach to Asia, with 45 participants in 10 countries voluntarily disclosing their seafood sourcing

Established in 2015 by the Sustainable Fisheries Partnership, the Ocean Disclosure Project (ODP) is an online reporting platform that aims to bring greater transparency to global seafood supply chains.[1] Through the ODP, participating companies publicly disclose their seafood sources through a common reporting profile that identifies the origin of their seafood, along with sustainability information.

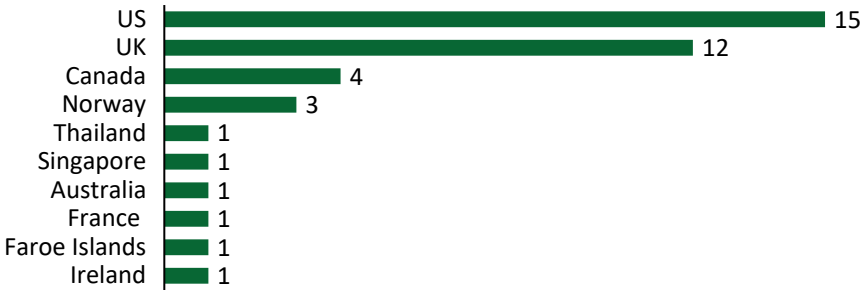
Since 2020, the ODP has transitioned from philanthropic funding to a mostly industry-funded model with a fee-based system for participants to help ensure the long-term financial sustainability of the project. Fees are based on company revenue and the number of expected sources in a profile. To date, 40 companies from around the world have disclosed their seafood sourcing through the ODP, including major retailers, seafood suppliers, distributors, and fish feed manufacturers.

More companies are now disclosing both their wild-caught and farmed seafood sources, and companies are increasingly reporting on key metrics such as percentage volumes of seafood sourced from certified fisheries and farms or improvement projects.

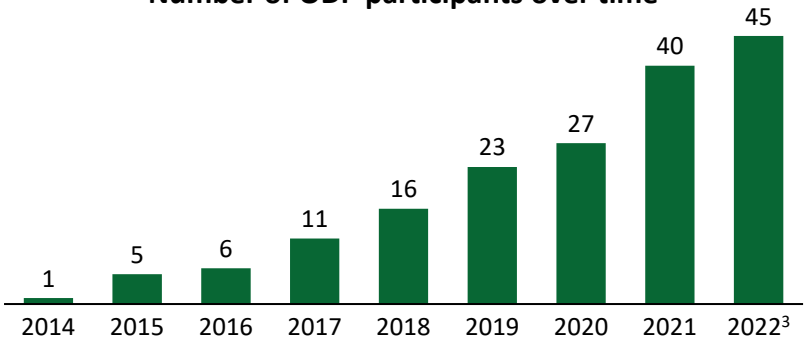
ODP priorities include:

- Expanding markets in geographies with existing ODP participating companies, including new participants in Latin America and southern Europe and increased participation in Asia.
- Increasing engagement with food service companies to disclose their seafood sourcing.
- Enhancing reporting of information related to source fishery impacts on endangered, threatened, and protected marine species.

Countries with ODP participants



Number of ODP participants over time



Notes: The ODP's website launched in 2017. Data reported on this page is from April 2022 and includes the number of participants projected in 2022. In 2021, SFP developed a new approach to rating farmed seafood in the ODP using SFP's FishSource aquaculture scores. For the ODP, the sum of the FishSource sub-scores for the worst-performing province/state within a country is converted to a 10-point index, resulting in a rating of "Well Managed," "Managed," or "Needs Improvement."
Sources: Information from OceanDisclosureProject.org and communication with Tania Woodcock, ODP, April 2022.

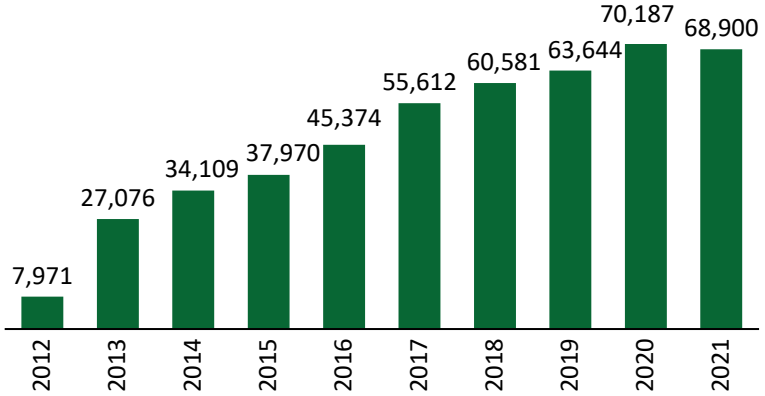
The number of fishing vessels broadcasting AIS data on GFW has almost doubled since tracking started in 2013

GFW is an international nonprofit organization dedicated to increasing transparency in fisheries and scientific research, supporting governments to address threats to marine resources, security, and coastal communities more effectively.

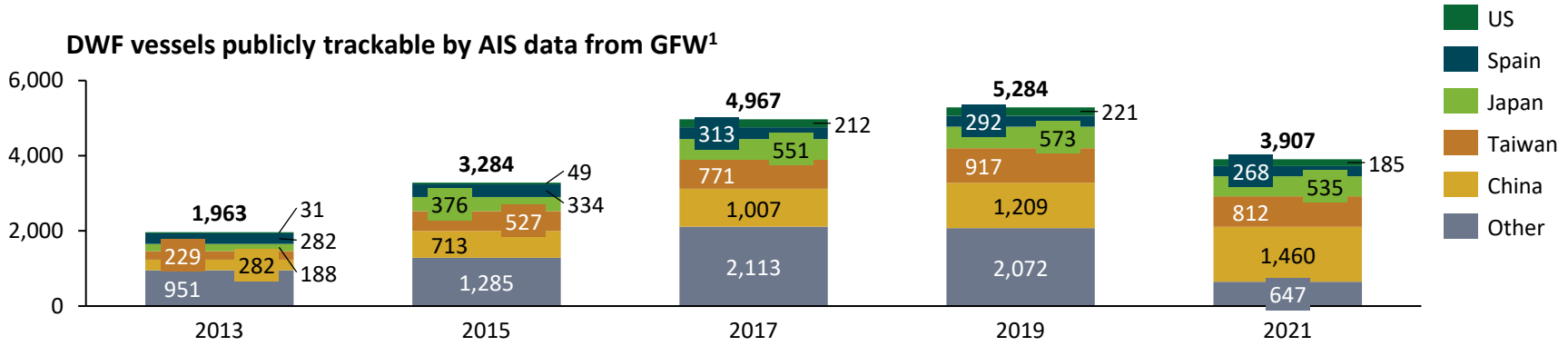
Progress as of April 2022:

- GFW public map platform tracks more than 70,000 of the world's largest fishing vessels.
- Ten countries (Benin, Belize, Brazil, Chile, Costa Rica, Ecuador, Indonesia, Panama, Peru, and the Republic of the Marshall Islands) committed to publicly sharing their vessel tracking data via GFW.
- More than 40,000 people are registered to use the GFW public map and data, which are publicly available and free.
- More than 2,000 scientific papers have been published since 2017 citing GFW research and datasets.

Active fishing vessels broadcasting AIS data



DWF vessels publicly trackable by AIS data from GFW[1]



1. DWF is defined as fishing vessels fishing outside a given country's FAO statistical area.

Note: The growth in trackable DWF is likely due to increased AIS usage and coverage over time. GFW's AIS coverage has increased over time and improved considerably in 2017 when a new data provider was added; the amount of DWF seems to be relatively stable since 2017.

Source: Communication with David Kroodsma, GFW, April 2022.

Several vessel tracking organizations also seek to address IUU fishing

PELAGIC data systems	OCEAN MIND	SKYLIGHT	OCEANA
• Pelagic Data Systems, founded in 2014, designed and developed an ultra-light solar-powered vessel tracking system for small-scale fisheries to track fleets, monitor activities, and provide data analysis, without requiring complex satellite-based systems used on large fishing fleets. • Location information is logged onto the system directly from satellite imagery and is encrypted until it can be transferred to a secure cloud server, enabling accurate and real-time vessel information. • Pelagic Data Systems provides monitoring and analysis to support compliance of protected areas, fisheries management, and supply chain insights.	• Launched in 2018, OceanMind began as a collaboration between the Satellite Applications Catapult and The Pew Charitable Trusts. Initially meant to develop technology fusing satellite data and artificial intelligence to detect IUU fishing, it soon transformed into a suite of services to help governments and the seafood supply chain understand and monitor fisheries compliance, climate and ocean health, undersea cultural heritage, and human rights onboard vessels. • OceanMind works with partners globally, such as the UK and Thai governments, the Seafood Task Force, The Pew Charitable Trusts, Conservation International, and Humanity United.	• Conceived and launched by Microsoft Cofounder Paul G. Allen in 2017, Skylight aims to improve maritime enforcement and combat IUU fishing. • Skylight provides maritime intelligence software and service solutions to identify suspicious vessel behaviors and alert authorities who can investigate and take enforcement and compliance action when necessary. Skylight uses vessel metadata, satellite-based analytics, and machine learning to enable efficient and intelligence-driven resource allocation and enforcement operations to provide real-time alerting and customized monitoring services.	• Launched in June 2021, Oceana's new IUU Vessel Tracker displays the movements of vessels currently IUU-listed by RFMOs. The Tracker displays ships' names, fishing activity, and locations in real time, together with EEZs and marine protected areas. • The tool uses AIS data from GFW and data from Trygg Mat Tracking's Combined IUU Vessel List.

Sources: Organization websites.

Since 2019, the IUU Fishing Index has been used to measure the risk of IUU fishing in and by different coastal states

The IUU Fishing Index assesses the degree to which states are vulnerable to and combat IUU fishing. The Index scores all coastal states against 40 different indicators. The Index measures the risk of IUU fishing in and by different countries and cannot be used to calculate the incidence of IUU fishing in individual countries, or perpetration of IUU fishing by given fleets.

The table at right highlights the worst-performing countries for different combinations of risk indicators related to state responsibilities and indicator types. While China, Taiwan, and Russia have remained worst performing since 2020, Indonesia and Cambodia have improved while Somalia, South Korea, and Yemen have worsened**.**

Worst-performing countries by indicator group

Responsibility	Type: Vulnerability	Type: Prevalence	Type: Response	Type: Overall
Coastal	• Japan • China • France	• Seychelles • Ecuador • Guinea Bissau (+ 4 others)	• Argentina • Congo, R. • Benin (+ 2 others)	• Congo, R. • Seychelles • Equatorial Guinea (+ • 2 others)
Flag	• China • France • Japan (+ 4 others)	• China • South Korea • Taiwan	• Russia • Guinea-Bissau • Libya	• China • Taiwan • Russia
Port	• Canada • China • France (+ 9 others)	• China • Thailand • Uruguay	• Bahrain • Brunei Darussalam • China (+ 7 others)	• China • South Africa • Singapore
General	• Vietnam • India • Indonesia	• Mexico • China • Ecuador (+ 1 other)	• Singapore • Eritrea • Israel	• Somalia • China • Eritrea (+ 1 other)
Overall	• China • Japan • USA	• China • South Korea • Taiwan	• Eritrea • Singapore • Yemen	• China • Russia • Korea (Rep. South)

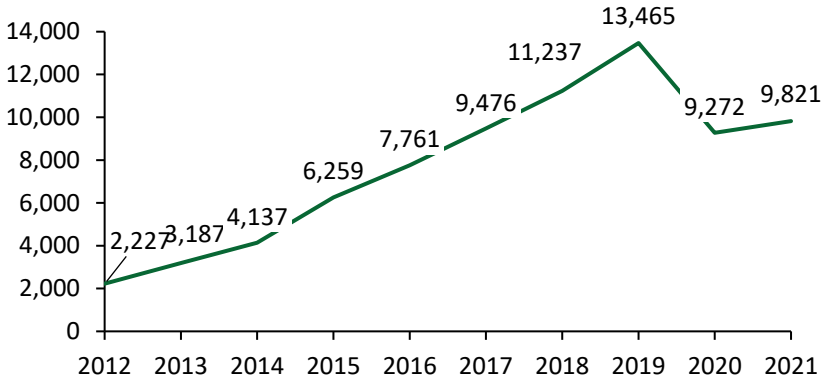
Note: Countries with the same scores in rankings are listed alphabetically. Where more countries than shown in the table have the same score, the number of additional countries is provided in parentheses. For a more comprehensive breakdown of countries by score, visit the IUU Fishing Index platform.

Source: G. Macfadyen and G. Hosch, "The IUU Fishing Index," 2021.

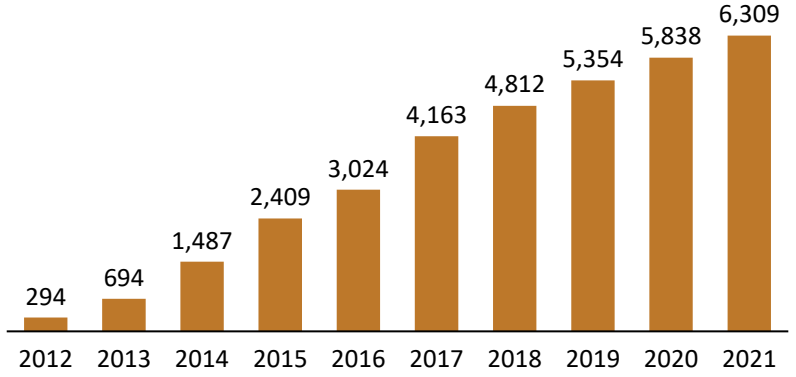
FishChoice registered more than 450 new members since 2020; more than 48% of products are certified by MSC or rated sustainable by Seafood Watch

FishChoice provides a seafood directory that highlights sustainably produced commodities and products, making it easier for those working within the seafood industry to find, procure, and sell more responsible products. The number of registered users, listed products, and listed suppliers continues to grow rapidly.

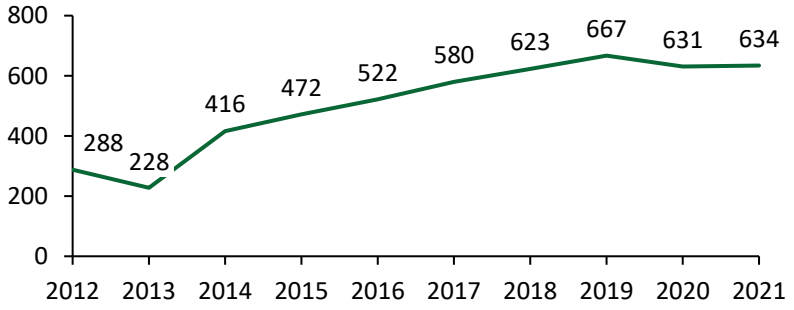
Posted products



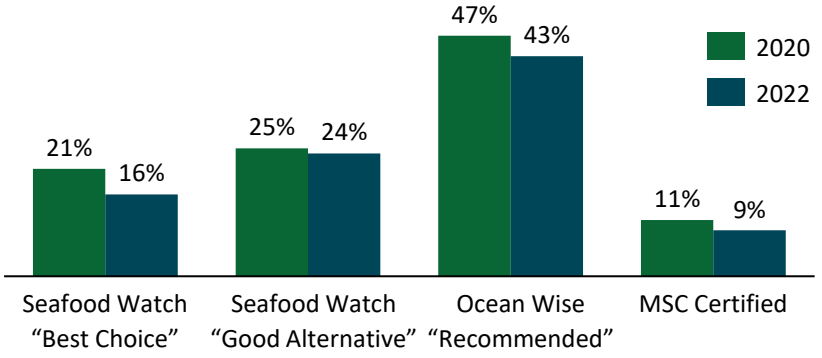
Registered members



Listed suppliers



Proportion of products that are certified or rated sustainable



Note: "Rated sustainable" is defined as Seafood Watch "Best Choice" or "Good Alternative." FisheryProgress removed duplicate products from its platform in 2020, which explains the dip in posted products in 2020. Source: Communication with Kristin Sherwood, FishChoice, April 2022.

FishSource, a database monitoring the status and environmental performance of fisheries, at least partially scores 41% of global fisheries volume

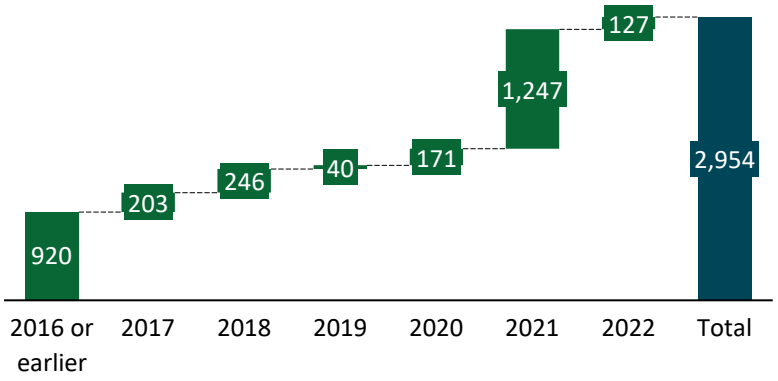
Currently, 41% of the global volume of fisheries, corresponding to 65% of fisheries on FishSource (2,954 out of 4,521), are at least partially scored for stock status and management quality on FishSource. FishSource now has profiles for 17 aquaculture units, covering 61 provinces/states across five species groups.

FishSource, launched in 2007 by SFP, is a publicly available online resource for major seafood buyers and other audiences to understand the sustainability of fisheries, fish stocks, and aquaculture.

FishSource defines a fishery as a unit wherein a fishing vessel is operated by a flag country within a management unit on a single stock or assessment unit of a single species or taxon. Total registered users as of March 2022 were 11,006, up 46% since 2020.

FishSource also recently piloted a new environmental impact scoring methodology in 2021, scoring 355 fisheries (7.9% of total fisheries) on four component scores (Endangered, Threatened, and Protected Species; Bycatch; Habitat; and Ecosystem).

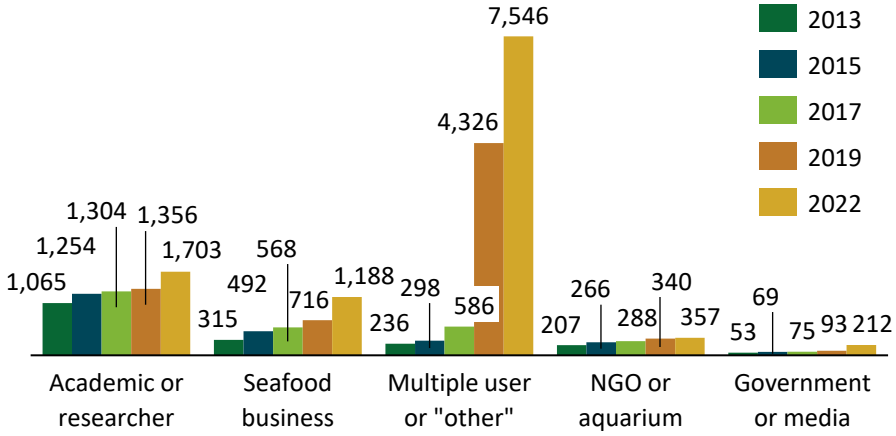
Fisheries scored on FishSource by year of last updated score



Note: FishSource profiles are not all fully developed. The team researches the stock and management structure and develops "shell profiles" as they receive requests from retailer partners. Then the profiles enter a prioritization queue and are developed as capacity allows. Currently around 50% of stock profiles have corresponding FishSource stock status and management quality scores, up from 40% in 2020.

Source: Communication with Susana Segurado, SFP, April 2022.

Registered FishSource users



Note: Since the new version of FishSource launched in late 2016, the organization type field was not mandatory to complete, although FishSource recently made a change to encourage users to add this information to their user profile. Certain categories, such as "consultancy/certification/investment" and "individuals" are included in the multiple user category for consistency.

POLICY CHANGE

Key takeaways

- Japan's newly revised fisheries law, the Improvement of Domestic Trade of Specific Marine Animals and Plants Act, aims to eliminate IUU-related seafood products from the Japanese market. It was passed in 2020, and enforcement begins in 2022.
- The Port State Measures Agreement, the first binding international legislation to combat IUU fishing, engages new countries since 2020: Nicaragua, Benin, Russia, and the UK.
- The EU's Anti-IUU Regulation, implemented in 2010, remains a leading catalyst in deterring IUU fishing, with yellow cards given to Cameroon and Ghana in 2021.
- The mandatory compliance requirements of the US Seafood Import Monitoring Program, initiated in 2018, covers only about 40% of seafood imports and faces challenges around its effectiveness in combatting illegal seafood.
- Global alignment on import control schemes need to be strengthened to effectively deter IUU fishing.

METRICS INCLUDED:

Policy timeline

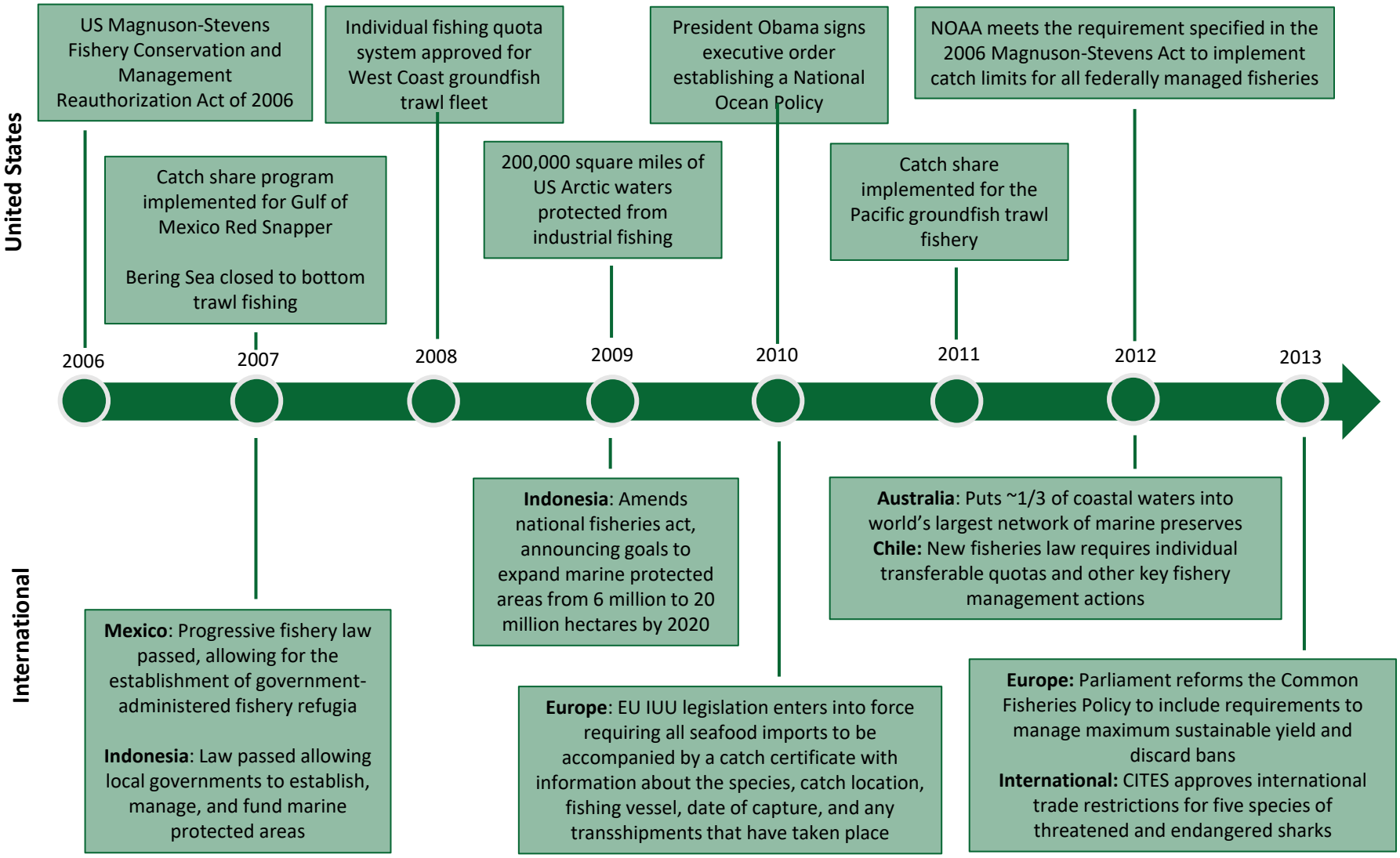
Port State Measures

EU & US policy updates

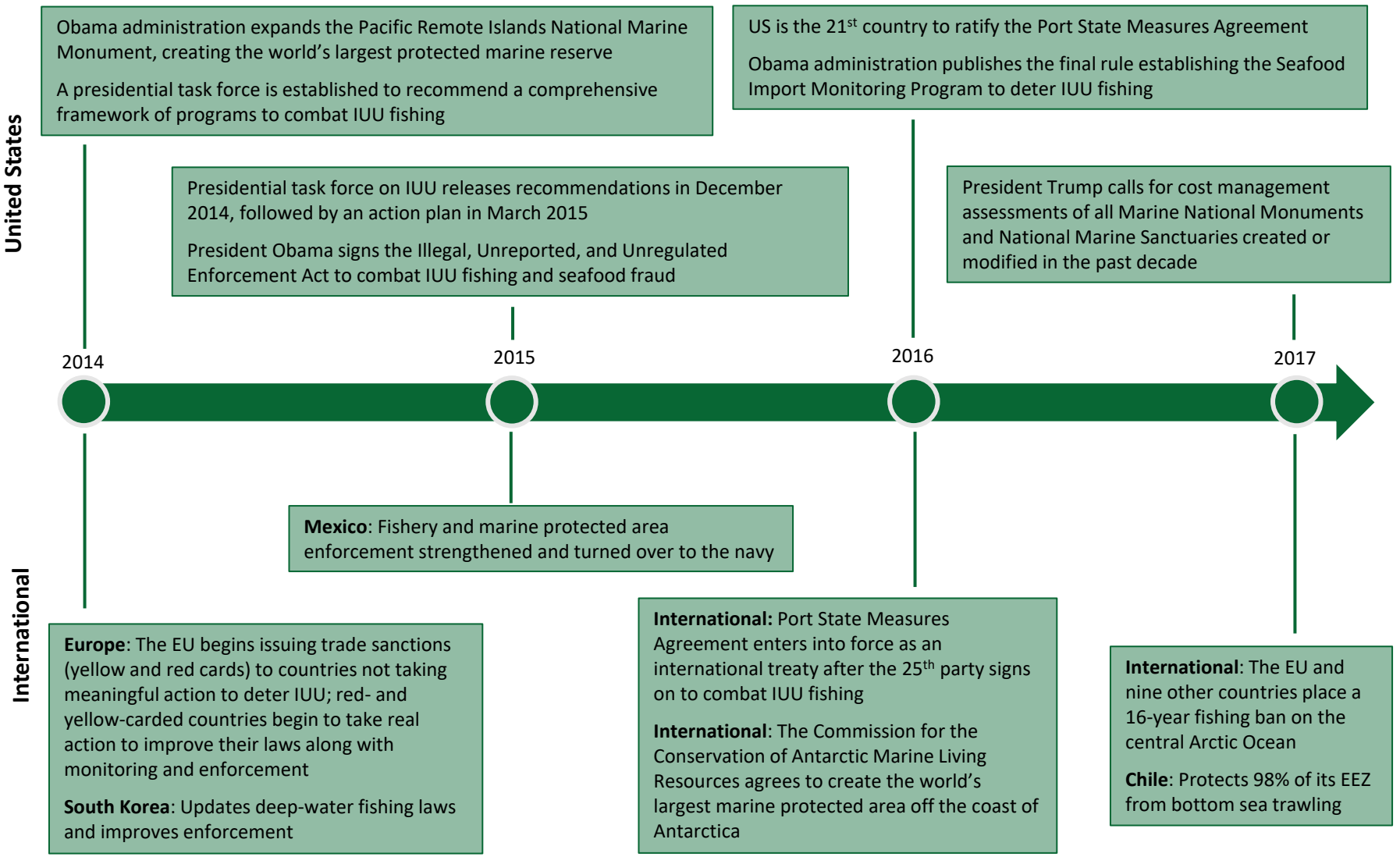
Import control scheme alignment

CEA CONSULTING

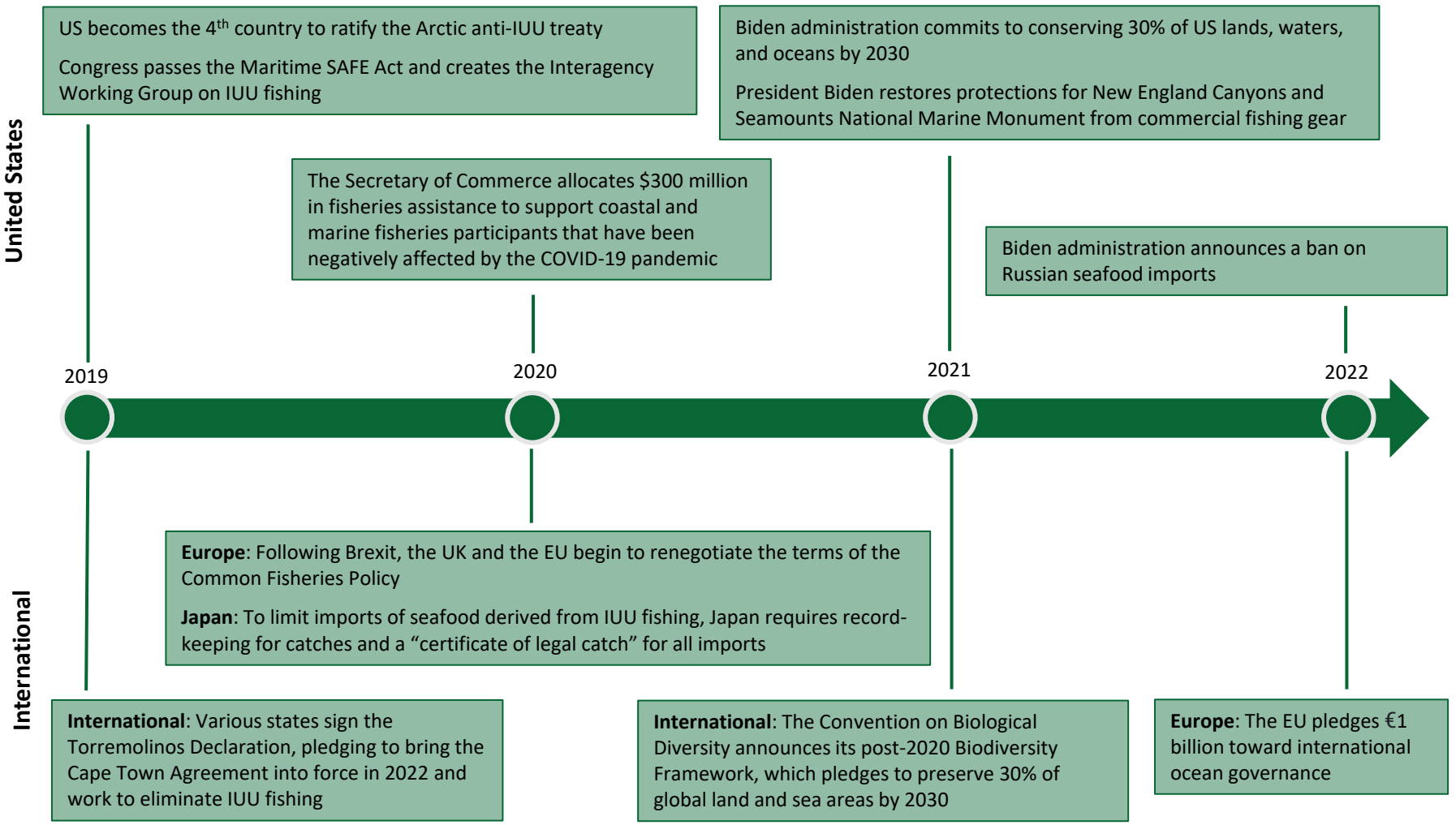
Timeline of major marine policy legislation and actions (1 of 3)



Timeline of major marine policy legislation and actions (2 of 3)



Timeline of major marine policy legislation and actions (3 of 3)



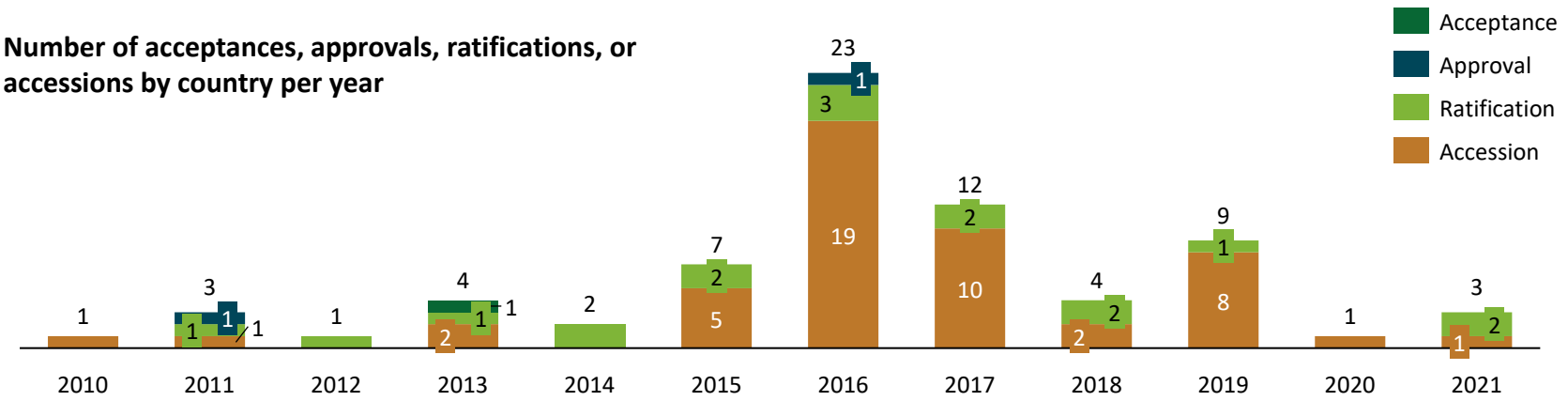
Six years after entering into force, the Port State Measures Agreement has garnered new participation from Nicaragua, Benin, Russia, and the UK since 2020

Adopted in 2009 and entering into force in 2016, the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA) is the first binding international agreement targeting IUU fishing, which affects up to 26 million tons of seafood annually. The PSMA prevents vessels engaged in IUU fishing from using ports and landing their catches, with the ultimate goal of eliminating IUU fishing.

The PSMA disincentivizes vessels engaged in IUU fishing while blocking IUU fishing products from national and international markets. The Agreement applies to fishing vessels seeking entry into a port other than those of their own state.

To formalize the role of participants, the PSMA Technical Working Group on Information Exchange convenes annually to provide guidance on information exchange mechanisms and best practices. Though the PSMA is a government agreement, seafood buyers also play an outsized role in the Agreement's success. Buyers can give preference to ports in states that are a party to the Agreement and can also advocate for states in which they have a supply chain presence to agree to the PSMA.

Number of acceptances, approvals, ratifications, or accessions by country per year



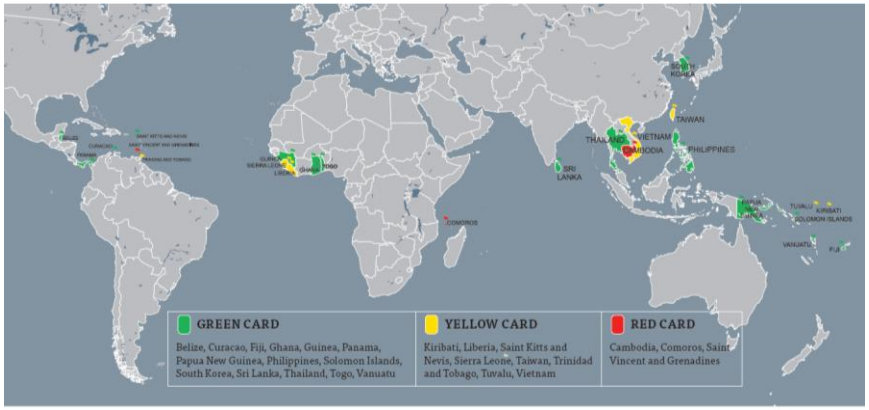
Note: The Agreement entered into force 30 days after the 25th instrument of ratification, acceptance, approval, or accession. This number was reached on May 6, 2016, so the Agreement entered into force on June 5, 2016.

Sources: Pew Charitable Trusts, "Port State Measures Agreement: Why Seafood Buyers Should Help," 2017; FAO Treaties Database, "Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal Unreported and Unregulated Fishing (PSMA)," 2022; FAO, "Agreement on Port State Measures Technical Working Group."

Since 2020, Cameroon and Ghana have received yellow cards from the EU's anti-IUU regulation

The EU's Anti-IUU Regulation continues to progress in its effort to reduce IUU fishing since its implementation in 2010. One core element of the regulation is the requirement that all wild-caught seafood imports have a legal harvest, verifying that all maritime fisheries products comply with existing conservation management measures. Countries that do not meet minimum requirements can be given a yellow card. If issues are not resolved after probation, a red card—or trade sanction—can be issued. Currently, Cambodia, Comoros, and St. Vincent and Grenadines are the only countries with a red card. A recent report from the Environmental Justice Foundation determined that the EU carding scheme was effective in improving legislation in noncooperating countries. In addition, improvements in compliance and enforcement along with reductions in the prevalence of IUU fishing are believed to be at least partially attributable to the carding scheme.

Countries where the EU IUU Regulation has been and is currently used (2019)[1]



Note: The absence of an end year in the time range indicates that the yellow card is still in effect. Fiji, Togo, Vanuatu, and Belize were omitted from the list as they were delisted in 2014 or earlier.
Sources: EU IUU Fishing Coalition, "Map of EU Carding Decisions," 2022; EU IUU Fishing Coalition, "Driving Improvements in Fisheries Governance Globally," 2022; Environmental Justice Foundation, "Blood and Water: Human Rights Abuse in the Global Seafood Industry," 2019.

Country	Yellow Carded	Red Carded
Cambodia	2012	2013
Cameroon	2021	
Comoros	2015	2017
Curacao	2013-2017	
Ecuador	2019	
Ghana	2013-2015, 2021	
Kiribati	2016-2020	
Korea	2013-2015	
Liberia	2017	
Panama	2012-2014; 2019	
Papua New Guinea	2014-2015	
Philippines	2014-2015	
Republic of Guinea	2012	2013-2016
Sierra Leone	2016	
Solomon Islands	2014-2017	
Sri Lanka	2012	2014-2016
St. Kitts and Nevis	2014	
St. Vincent and Grenadines	2014	2017
Taiwan	2015-2019	
Thailand	2015-2019	
Trinidad and Tobago	2016	
Tuvalu	2014-2018	
Vietnam	2017	

Since the Seafood Import Monitoring Program's implementation in 2016, several updates have been proposed to close loopholes and maximize effectiveness

In 2016, the US established the Seafood Import Monitoring Program (SIMP) as a measure to keep IUU seafood from entering the US market. SIMP is a risk-based traceability program that uses permitting, data reporting, and recordkeeping requirements to prevent IUU seafood and seafood products from entering US commerce. Seafood and seafood products can therefore be traced from point of harvest to entry into the US market. January 1, 2018, was the mandatory compliance date for most of the priority species listed below, which represent about 40% of seafood imports:

- Abalone
- Atlantic cod
- Blue crab (Atlantic)
- Dolphinfish (Mahi Mahi)
- Grouper
- King crab (red)
- Pacific cod
- Red snapper
- Sea cucumber
- Sharks
- Shrimp*
- Swordfish
- Tunas: albacore, bigeye, skipjack, yellowfin, and bluefin

Spotlight: Proposals to enhance SIMP's effectiveness

At least 60% of seafood imports entering the US are not covered by SIMP, providing an easy pathway for billions of dollars' worth of illegal products to continue to enter the US and a major incentive for mislabeling SIMP-covered products as non-SIMP products. Before SIMP, a seafood fraud investigation conducted by Oceana determined that, on average, one-third of samples tested nationwide were mislabeled. Following SIMP's implementation, Oceana tested seafood not covered by the program and found that 21% of samples were still mislabeled. Several reports and organizations have highlighted possible loopholes, as well as ways to enhance the effectiveness of the program. The International Trade Commission also found that nearly 11% of total US seafood imports ($2.4 billion worth of seafood) in 2019 were derived from IUU fishing.

In 2021, NOAA issued a retrospective report on its implementation of SIMP. The report indicated a focus on improving program effectiveness by expanding program personnel and capacity, modernizing information technology infrastructure, and enabling automated targeting of imports.

In May 2021, the bipartisan Illegal Fishing and Forced Labor Prevention Act (H.R. 3075) proposed extending SIMP to include all species, along with other measures to enhance traceability and transparency in seafood supply chains. Major sections of H.R. 3075 were included in the COMPETES Act, which passed the House of Representatives in February 2022.

A recent report from Oceana details several recommendations to improve coverage and effectiveness of SIMP. The proposed reforms include requiring:

- documentation for all imported seafood (rather than just the 13 commodities) that follows seafood products from boat to border
- robust labeling information on all products that specifies the scientific species name, area, and method of catch, and that distinguishes between wild-caught and farmed products

Sources: Communication with Sandy Aylesworth and Molly Masterton, NRDC, April 2022; Oceana, "Fishing for Trouble: Loopholes Put Illegally Caught Seafood on Americans' Plates," 2021.

Global alignment on import control schemes needs to be strengthened to effectively deter IUU fishing

Greater standardization across import control schemes is critical to combat IUU fishing. Currently, country-specific and RFMO-level import control rules form a patchwork of regulations that enable undetected IUU products to enter markets and increase the cost of compliance for fishers and supply chain actors operating in multiple markets.

As two of the world's largest seafood markets, the EU and US have some alignment across key data elements for import control schemes. A recent investigation by WWF found that 10 of their 17 key data elements recommended are aligned between the two systems (59%). Overlapping requirements include vessel name, vessel flag, information on exporters, identity of import companies, product type, species name, processed weight, event data, and processing location. There is an opportunity for 65% alignment by strengthening the current requirements of four key data elements (IMO number, eligibility, transshipment information, and fishing authorization).

In January 2020, a joint report from the Environmental Justice Foundation, Oceana, The Nature Conservancy, Pew, and WWF identified several recommendations to harmonize import control schemes, including:

- Expand unilateral, country-based import schemes to cover all species
- Adopt electronic systems for more efficient and secure data handling, and facilitate data exchange and cross checks
- Require verification of information to ensure accuracy and trigger additional actions by governing bodies
- Improve routine and timely information sharing, allowing authorities to restrict market access

Status of Import Control Scheme in Leading Countries/Geographies	
Australia	Australia lacks a targeted seafood import control rule to ensure legality. Currently, the government relies on food safety and biosecurity legislation to curb the IUU products entering the seafood market.
EU	In 2017, the EU set an overarching policy that ensures imports from outside the EU meet the same standards as food produced within the EU. Among other requirements, the exporting state is required to be on a "positive list of eligible countries" as determined by the Commission's implementing regulation. Exporters are also required to prove that their products meet the EU's hygiene standards from production through distribution.
Japan	Japan currently requires a catch documentation scheme for fishery products vulnerable to IUU fishing. The Fisheries Agency is considering pacific saury, squid, mackerel, and sardine as targeted species once Japan's new IUU law enters enforcement in December 2022. Japan also enacted specific regulations for the tuna trade, which enforces several RFMOs' catch documentation scheme requirements.
United Kingdom	After its exit from the EU, the UK renegotiated the terms of the Common Fisheries Policy in 2020. The new policy still requires seafood imported into the UK from the EU and elsewhere to have valid catch certification if it is named in the IUU Regulation.
US	Created in 2018, SIMP establishes recording and recordkeeping requirements for 13 seafood species groups identified as vulnerable to IUU fishing. Importers are required to hold an International Fisheries Trade Permit and gather data for covered fish and fish products as a condition of import.

Sources: Minderoo Foundation, "Mending the Net," 2021; Seafood Alliance for Legality and Traceability, "Seafood Import Regulation Guide (EU, Japan, and the U.S.)," 2021; Environmental Justice Foundation et al., "A Comparative Study of Key Data Elements in Import Control Schemes Aimed at Tackling Illegal, Unreported, and Unregulated Fishing in the Top Three Seafood Markets," 2020; Seafish, "Seafood Trade Under the EU-UK Trade and Cooperation Agreement," 2020.

SOCIAL RESPONSIBILITY

Key takeaways

- The scope of social responsibility in seafood varies widely, making the topic difficult to comprehensively describe. Industry engages in social responsibility to fulfill legal obligations, in addition to other rationales like moral obligation and reputational risks.
- Several key international instruments support social responsibility in the seafood sector and provide guidance for industry.
- The landscape of actors operating in social responsibility in seafood is broad and spans human and labor NGOs operating in the seafood sector, precompetitive collaborations, FIP implementers, funders, industry, and more. There is plenty of work to be done—the World Benchmarking Alliance's Sustainable Seafood Index found that half of reviewed companies lack a comprehensive commitment to protect human rights in their operations and supply chains and one third of companies do not have a commitment to respect the health and safety of workers in their operations and supply chains.
- Many resources exist to guide industry engaging on social responsibility in seafood, from certifications and voluntary labor standards to frameworks, guidelines, benchmarks, tools, and other broader community resources.
- Seafood markets actors face challenges in improving alignment and clarity on social responsibility efforts. Current challenges include duplicating efforts and lack of strong partnerships with human and labor rights organizations and a growing number of social responsibility tools and initiatives that may be duplicative or confusing for industry.

METRICS INCLUDED:

Scope and international instruments

Landscape of actors

Selection of community resources

Current challenges

The scope of social responsibility in seafood is broad; there are many reasons for industry to engage beyond legal obligations

Efforts to address social responsibility in the seafood sector vary significantly. Social responsibility efforts can include addressing human and labor rights, child labor, gender equity, fair pay, livelihoods, food security, community well-being, and more. More significant media attention and scientific research has been dedicated to better understanding and addressing labor rights violations at sea and in industrial fishing operations.[1] In 2017, a coalition of NGOs and businesses developed a definition of social responsibility for the seafood sector, called the Monterey Framework for Social Responsibility (Monterey Framework). The Social Responsibility Assessment (SRA) Tool for the Seafood Sector is the operationalization of the Monterey Framework, and FisheryProgress uses the SRA Tool as the framework for FIPs to report on social performance.

There are many motivations and drivers for industry to address social responsibility in seafood. A primary driver for the seafood industry to uphold human and labor rights is legal obligations identified in international policies.

Additional drivers of activity include:

- Moral and ethical pressure
- Reputational risks from media exposés
- Consumer demand for socially responsible seafood
- Improved guidance for industry to identify risks and make improvements on social responsibility in seafood
- Adoption of social metrics in benchmarking reports and public disclosure platforms
- Inextricable linkages between social and environmental outcomes in fisheries

The Three Core Pillars of the Monterey Framework for Social Responsibility

Protect human rights, dignity, and access to resources

- Fundamental human rights are respected, labor rights are protected, and decent living and working conditions are provided, particularly for vulnerable and at-risk groups.
- Rights and access to resources are respected, fairly allocated, and respectful of collective and indigenous rights.

Ensure equality and equitable opportunity to benefit

- Recognition, voice, and respectful engagement for all groups, irrespective of gender, ethnicity, culture, political, or socioeconomic status.
- Equal opportunities to benefit are ensured to all, through the entire supply chain.

Improve food and livelihood

- Nutritional and sustenance needs of resource-dependent communities are maintained or improved.
- Livelihood opportunities are secured or improved, including fair access to markets and capability to maintain income generation.

Source: 1. Elena M. Finkbeiner, Juno Fitzpatrick, and Whitney Yadao-Evans, "A Call for Protection of Women's Rights and Economic, Social, Cultural (ESC) Rights in Seafood Value Chains," 128 *Marine Policy* (June 2021): 104482.

Several key guiding international instruments address human and labor rights in the seafood sector[1]

Guiding Instruments[1]	Description
United Nations Guiding Principles on Business and Human Rights - 2011[2]	The Guiding Principles are founded on three pillars: • The state duty to protect human rights against abuse by third parties, including business, through appropriate policies, legislation, regulations, and adjudication; • The corporate responsibility to respect human rights, meaning to act with due diligence to avoid infringing on the rights of others and address adverse impacts; • The need for greater access to effective remedy, both judicial and nonjudicial, for victims of business-related human rights abuse. The Guiding Principles also make clear that companies should have in place: • A statement of their policy commitment to respect human rights; • A human rights due diligence process to 1) assess their actual and potential human rights impacts; 2) integrate the findings and take action to prevent or mitigate potential impacts; 3) track their performance; and 4) communicate their performance; • Processes to provide or enable remedy to those harmed, if the company causes or contributes to a negative impact.
International Labor Organization Convention on Work in Fishing (C188) - 2007	C188 is the most comprehensive and wide-reaching instrument addressing labor in fishing, with recommendations for a broad set of concerns: minimum age, medical examination of fitness to work, manning and hours of rest, crew list requirements, fishers' work agreements, repatriation, recruitment and placement, payment, accommodation and food, medical care, occupational safety and health, and social security. C188 applies to formal and informal workers, to both small-scale and large-scale commercial fishing and, importantly, to both employed and share-fishers. Although few countries have ratified the convention and its implementation remains limited, C188 provides language and a set of minimum conditions that must be met to fulfill the minimum standards for decent work in fishing.[3]
International Labor Organization Declaration of Fundamental Principles and Rights at Work - 1998	The ILO Declaration emphasizes the universality and fundamental nature of core labor principles and rights (enshrined in eight fundamental conventions) regarding freedom of association, collective bargaining, and the elimination of certain kinds of work (forced labor, child labor) and employment discrimination—encouraging member states to promote these irrespective of ratifying independent conventions.[3]

Sources: 1. Note: The table of guiding policies is not meant to be exhaustive. Other relevant regulations include the Universal Declaration of Human Rights, the International Covenant on Economic, Social, and Cultural Rights, the International Covenant of Civil and Political Rights, the US Illegal Fishing and Forced Labor Prevention Act, the EU Draft Directive on Corporate Due Diligence and Corporate Accountability, and the German Supply Chain Due Diligence Act. 2. https://www.ungpreporting.org/resources/the-ungps/ 3. Alejandro J. Garcia Lozano et al., "Decent Work in Fisheries: Current Trends and Key Considerations for Future Research and Policy," *Marine Policy* 1366 (February 2022): 104922.

The landscape of actors at the intersection of social responsibility and seafood markets spans labor NGOs, environmental NGOs, FIP implementers, precompetitive collaborations, industry, and funders

The global landscape of actors engaged on social responsibility and on human and labor rights in seafood is broad and expanding. Specifically in the seafood markets space, key actors include human and labor rights NGOs and consultants, FIP implementers, funders, eNGOs, industry players, and precompetitive collaborations.[1]

Illustrative human and labor NGOs operating in the seafood sector

- Environmental Justice Foundation
- Fair Hiring Initiative
- Global Labor Justice - International Labor Rights Forum
- Human Rights at Sea
- Issara Institute
- KORAL (Indonesia)
- Oxfam
- Seafood and Gender Equality
- Seafood Working Group (coalition)
- Stella Maris
- Women in Seafood Industry
- Worker-Driven Social Responsibility Network
- Yilan Migrant Fishers Network (Taiwan)

Precompetitive collaborations

- Global Sustainable Seafood Initiative
- Global Tuna Alliance
- International Seafood Sustainability Foundation
- Sea Pact
- Seafood Business for Ocean Stewardship
- Seafood Ethics Action Alliance
- Seafood Task Force
- Sustainable Seafood Coalition

For more information, see CEA's 2021 Landscape Review of Sustainable Seafood Precompetitive Collaborations. This report does not highlight NGO collaborations such as the Conservation Alliance for Seafood Solutions and the NGO Tuna Forum.

Funders[2]

- David and Lucile Packard Foundation (including the Resources Legacy Fund)
- Freedom Fund
- Gordon and Betty Moore Foundation
- Humanity United
- Oak Foundation
- Walmart.org
- Walton Family Foundation

FIP Implementers

FisheryProgress Human Rights and Social Responsibility Policy Early Adopters

- Asosiasi Perikanan dan Handline Indonesia (AP2HI)
- Caroline Fisheries Corporation
- CeDePesca
- Comunidad y Biodiversidad A.C. (COBI)
- Key Traceability
- OPAGAC
- Pronatura Noreste AC
- Rai Seafoods

Social Responsibility Assessment (SRA) Tool[3]

- Conservation International
- Ocean Outcomes

Independent Approach & Methodology

- Blueyou
- WWF-US
- SFP
- Future of Fish
- SmartFish AC

Source: 1. "The FIP Social Landscape Project," 2022. 2. Note: This list of funders does not include bilateral (e.g., USAID) and multilateral (e.g., GEF, Pacific Islands Forum Fisheries Agency) agencies. 3. FisheryProgress uses the SRA Tool for the Seafood Sector as the framework for FIPs to report on social performance. Additional FIP implementers that have piloted the SRA tool include Blue Ventures, CeDePesca, Ocean Outcomes, Future of Fish, Key Traceability, MDPI, Smartfish AC, and Conservas Garavilla.

Spotlight: SEA Alliance engages 28 companies in the UK to strengthen human rights due diligence in global seafood supply chains

The Seafood Ethics Action (SEA) Alliance engages 28 companies in the UK with domestic and/or global seafood supply chains on addressing human and labor rights in their supply chains.

Launched in 2018, the SEA Alliance is a precompetitive collaboration of UK retailers and seafood businesses aiming to strengthen human rights due diligence carried out in the global seafood supply chain and to ensure respect for human rights. Currently there is no membership fee, but this may change in the future.

Members must commit to the following obligations:

- Implement, where appropriate, a human rights due diligence approach, in line with the UN Guiding Principles.
- Demonstrate a strong commitment to ethical trade and respecting human rights, and to meeting their legal human rights due diligence requirements.
- Undertake work to support the collective aims of the SEA Alliance, and to integrate learnings and tools from the SEA Alliance into their organization's human rights due diligence activities and wider business practices.

SEA Alliance workstreams[1]	Illustrative long-term outcomes	Key progress updates
Human Rights Due Diligence	• Increase alignment in the seafood industry on human rights standards in seafood supply chains and effective due diligence processes. • Increase implementation of impactful approaches that address human rights risks in seafood supply chains.	• Developed the Fishery Risk Assessment in partnership with SFP, conducting high-level human rights risk assessment of 300 fisheries supplying the UK market. • Issued a statement in response to the human rights allegations in the UK fishing sector in May 2022. • Convened a group to coordinate its response to human rights allegations in the Irish fishing industry.
Government Advocacy	• Engage priority sourcing countries of SEA Alliance members through advocacy activities. • Share work program and campaign priorities in key inter-governmental and industry fora.	• Advocated to support the ratification and implementation of the Cape Town Agreement, targeting 120 government ministries across more than 40 flag states of vessels in SEA Alliance company supply chains. • Developed an advocacy strategy focused on promoting the ratification and implementation of key international instruments.
Change on the Water	• Develop and launch the Change on the Water Fund. • Adopt common indicators by member companies, non-member companies, and other organizations to measure impact and progress in supply chains.	• Established the Change on the Water Fund to drive improvements in human rights and labor standards at the fishery and aquaculture farm level and launched a pilot program in June 2022.

1. Note: SEA Alliance also has a "Governance" workstream and in January 2022 published its Terms of Reference.
Sources: Communication with Andy Hickman, SEA Alliance in April 2022; SEA Alliance website.

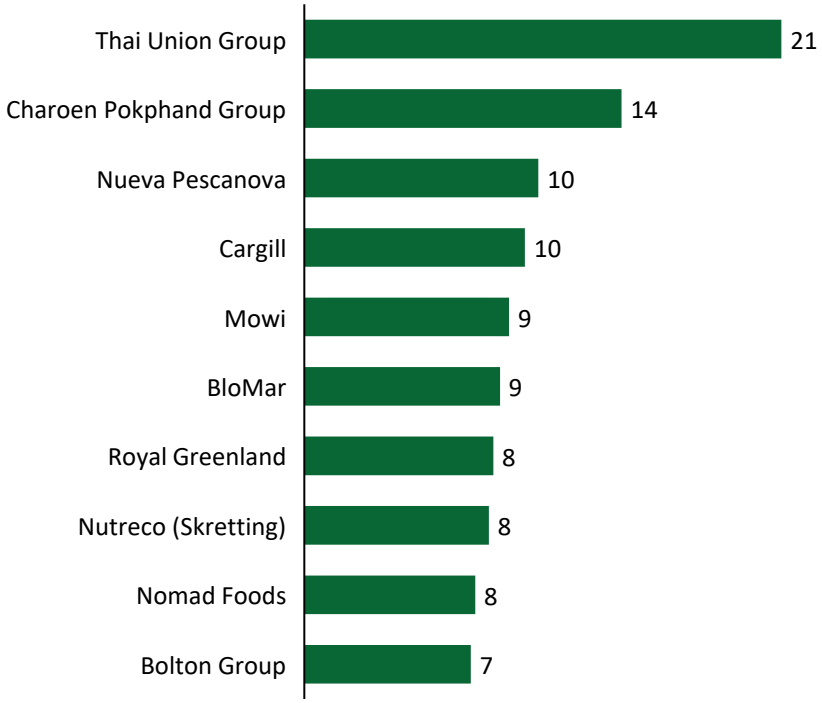
Spotlight: The 2021 WBA SSI finds half of top seafood companies lack commitments to protect human rights

The 2021 SSI finds that top seafood companies are performing poorly on critical social measures. The SSI benchmarked and rated the 30 largest companies that produce seafood or aquaculture feed using indicators across governance and strategy, ecosystems, traceability, and social responsibility to measure performance. The social responsibility measurement area incorporates WBA's 18 core social indicators that assess companies on efforts to respect human rights, provide and promote decent work, and act ethically. It also includes nine food- and seafood-specific social responsibility indicators, including working and living conditions on board vessels and farmer and fisher productivity and resilience.[1]

SSI findings on social responsibility include:[2]

- Half of the companies lack a comprehensive commitment to protect human rights in their operations and supply chains, and only three companies (CP Group, Thai Union, and Royal Greenland) have a comprehensive commitment to prohibit forced labor. Only Thai Union has a full human rights due diligence mechanism in place.
- One-third of companies do not have a commitment to respect the health and safety of workers in their operations and supply chains, and only eight companies have an explicit policy that addresses working and living conditions on board fishing vessels.
- Two-thirds of companies do not have a public commitment to support small-scale farmers and fishers or provide evidence of doing so.
- None of the companies disclose targets related to paying a living wage across their operations.

Top 10 scoring companies on social responsibility in the 2021 WBA SSI (scores out of 30)



Sources: 1. WBA, "Methodology for the Seafood Stewardship Index," March 2021. 2. "Seafood Companies Fall Short on Addressing Human and Labour Rights," WBA SSI Key Finding, 2021.

Spotlight: Many voluntary community resources guide engagement on social issues in seafood

The frameworks, benchmarks, certifications, voluntary labor standards, and tools listed below are not intended to be comprehensive but highlight the growing concern and availability of resources for the seafood markets community to address social responsibility. This lists emphasize activity within the seafood markets community and do not, for example, reflect the full suite of activity in the human and labor rights and development spaces.

Frameworks & Guidelines

- Certification and Rating Collaboration Framework for Social Responsibility in the Seafood Sector
- FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries
- Monterey Framework for Social Responsibility
- Triple Impact Fisheries Evaluation Framework

Benchmarks

- Sustainable Supply Chain Initiative (currently benchmarks third-party social compliance auditing, monitoring, and certification schemes)

Certifications and Voluntary Labor Standards[1]

- AENOR APR (Tuna from Responsible Fishing) Certification Scheme
- Aquaculture Stewardship Council
- Fair Trade Certified Seafood
- Fairness, Integrity, Safety and Health (FISH) Standard for Crew
- Friend of the Sea
- Global Seafood Alliance Seafood Processing Planet Standard, Enhanced Social Accountability Audit, and Responsible Fishing Vessel Standard
- GLOBALG.A.P. Aquaculture Standard
- International Transport Workers' Federation Blue Certificate
- Marine Stewardship Council
- MarinTrust Standard (fishmeal and fish oil)
- Naturland Organic Aquaculture and Sustainable Capture Fishery
- Seafood Task Force Vessel Auditable Standard

Tools

- Golden Dreams smartphone app (Issara Institute)
- Labor Safe Screening (Sustainability Incubator)
- Seafood Slavery Risk Tool (Monterey Bay Aquarium, Liberty Shared, and Sustainable Fisheries Partnership)
- Social Responsibility Assessment Tool for the Seafood Sector

Policies & Community Resources

- FisheryProgress Human Rights and Social Responsibility Policy
- Conservation Alliance for Seafood Solutions Fishery Improvement Projects Guidelines (new version available in September 2022)
- Roadmap for Improving Seafood Ethics - RISE (FishWise)

Note: The Worker-Driven Social Responsibility Network framework has yet to be applied to seafood but is a leading framework in other sectors.
Sources: 1. "Seafood Certification and Voluntary Labor Standards," FishWise Roadmap for Improving Seafood Ethics (RISE). 2. "The FIP Social Landscape Project," 2022.

Spotlight: 30 FIPs are Early Adopters of the new FisheryProgress Human Rights and Social Responsibility Policy

FisheryProgress launched its first-ever Human Rights and Social Responsibility Policy in May 2021. The objective of the policy is to help FIPs reduce the risk of human and labor rights abuses and to provide a common framework for reporting on social performance in fisheries. All FIPs reporting on FisheryProgress.org must comply with the policy according to the phased implementation timeline outlined therein.

The Packard Foundation and Walton Family Foundation will co-fund an evaluation of the implementation of the Human Rights and Social Responsibility Policy.

As of March 2022:

- 99% of FIPs are currently in compliance with requirements of the social policy for their FIP(s).
- 30 FIPs are Social Responsibility Early Adopters and have committed to fulfilling some or all of the relevant requirements of the Policy before the deadlines.
    - These FIPs are adopting some or all of the following: Public Policy Statement, Self-Evaluation of Risk Criteria, Vessel or Fisher Information, Fisher Awareness of Rights, and Grievance Mechanism.
    - Examples of Early Adopter FIP implementers leads include Caroline Fisheries Corporation, CeDePesca, Comunidad y Biodiversidad A.C., Pronatura Noreste AC, OPAGAC, and Rai Seafoods.
    - Businesses such as Tesco, Ahold Delhaize, The Big Prawn Co., and Iberostar Group have made public statements of support for the Policy.

Source: FisheryProgress Social Responsibility webpage.

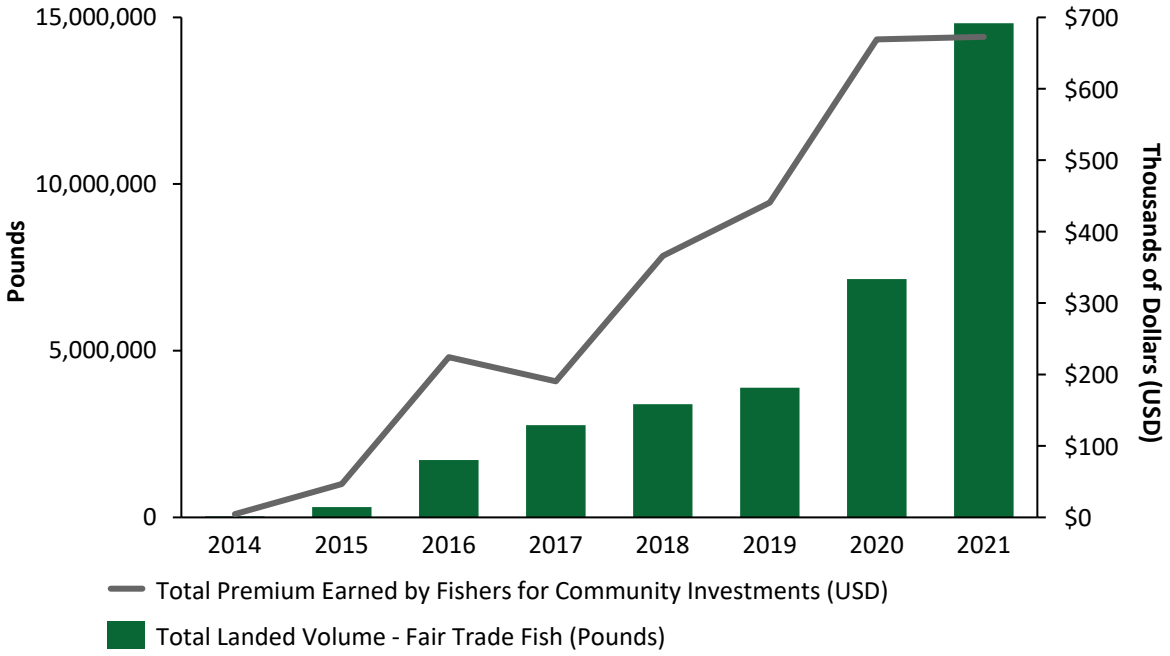
FisheryProgress Human Rights and Social Responsibility Policy Components	
Component 1: Requirements for All FIPs	All FIPs reporting on FisheryProgress must: 1.1 Demonstrate that there is a public policy statement outlining a commitment to human rights and social responsibility. 1.2 Provide information about the vessels or fishers included in the FIP. 1.3 Undertake best efforts to make fishers aware of their rights. 1.4 Demonstrate there is a grievance mechanism available to all fishers in the FIP. 1.5 Complete a self-evaluation against the FisheryProgress criteria for increased risk of forced labor and human trafficking.
Component 2: Additional Requirements for All FIPs that Meet the Risk Criteria	FIPs that meet one or more FisheryProgress criteria for increased risk of forced labor and human trafficking (see Requirement 1.5) must: 2.1 Complete a risk assessment using the Social Responsibility Assessment Tool. 2.2 Create a social workplan to address all red indicators in the risk assessment. 2.3 Report publicly on action progress and update indicator scores.
Component 3: Requirements for Voluntary Reporting on Social Performance	Any FIP on FisheryProgress may voluntarily report on their performance or progress on one or more social issues. Component 3 details the requirements for FIPs that choose to exceed the minimum requirements outlined in Components 1 and 2.

Spotlight: Fair Trade USA Certificate Holders have distributed over $2,339,000 in premiums to fishing communities since 2017

Fair Trade USA began certifying seafood in 2014, and the following benchmarks have been met as of July 2021:

- **The Fair Trade USA program saw a 59% increase in volume in 2021 and anticipates more than 20% growth in 2022.** The program has developed an initiative to engage retailers to continue stimulating market demand for certified and sustainable seafood, focusing on attaining programmatic recognition of the organization's Certified Seafood Standard within the sustainable procurement programs at key retail partners.
- **Fair Trade USA certificate holders employ more than 10,000 fishers and workers.**

Total Fair Trade USA certified landed volume and total premium earned by fishers, 2014-2021[1]



Year	2014	2015	2016	2017	2018	2019	2020	2021	2022[1]
Total number of certificate holders	1	1	3	6	6	9	13	17	22

Source: Communication with Ryan Owen and Jesse Appleman, Fair Trade USA, April 2022.
1. Data was collected from 2014 through the first half of 2022.

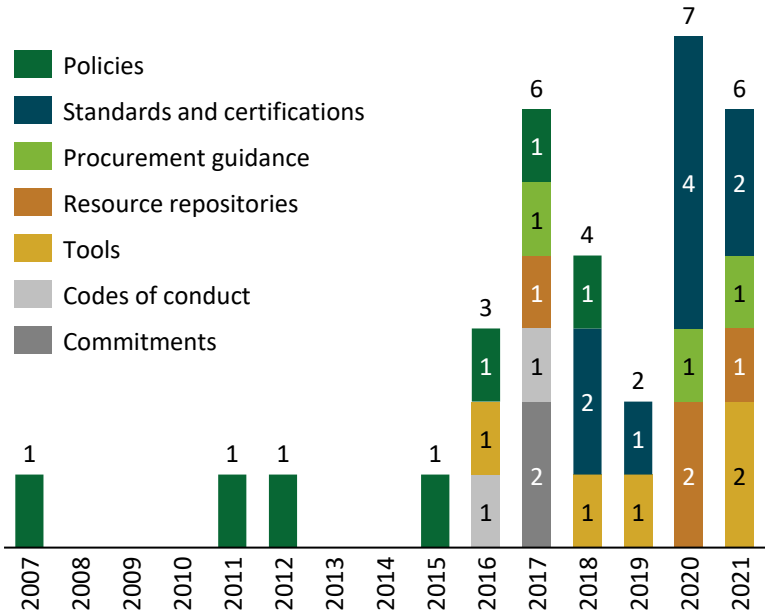
The seafood markets community faces challenges and tensions in prioritizing approaches to adequately address social responsibility

Many of these perspectives were recently identified in "The FIP Social Landscape Project" 2022 report:[1]

- Actors use inconsistent definitions of social responsibility and social elements to describe their work.
- Actors have different goals for incorporating social responsibility (from addressing human/labor rights to gender equity or food security) in different types of fisheries (e.g., small-scale, industrial), which can perpetuate confusion. Actors need to more effectively align and coordinate efforts on social responsibility.
- The environmental NGO community is perceived as not acting in full partnership with human and labor rights organizations in collaborative processes and may be duplicating efforts to address social issues in seafood.
- There is concern about whether human and labor rights should be addressed through markets-based approaches.
- Social responsibility tools and initiatives in the seafood sector have proliferated, contributing to a lack of alignment and coordination in the NGO community (see chart at right). Additionally, voluntary standards and audits have been shown to be ineffective in protecting human rights.
- Challenges and tensions include perceived lack of service providers, lack of demand for socially responsible seafood, need for increased worker-driven approaches, overreliance on and misunderstanding of social audits and certifications, and lack of watchdogs and whistle-blowers in the sector.

Seafood market actors continue to seek alignment and coordinate efforts on social responsibility. The Conservation Alliance for Seafood Solutions is committed to hosting discussions to address some of challenges identified in the Sparks et al. 2022 paper.

Growth in voluntary labor governance tools in seafood over time, 2007-2021[2]



Sources: 1. "The FIP Social Landscape Project," 2022. 2. Jessica L. Decker Sparks et al., "Worker-less Social Responsibility: How the Proliferation of Voluntary Labour Governance Tools in Seafood Marginalise the Workers They Claim to Protect," *Marine Policy* 139 (May 2022): 105044.