

the David &
Lucile Packard
FOUNDATION



Progress toward Sustainable Seafood – By the Numbers 2015 Edition

California Environmental Associates

Overview of Seafood Metrics Project

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)
- Aggregate and provide all readily available data on sustainable seafood efforts and impacts to the conservation community
- Inform long-term adjustments to strategy and other market-based approaches to addressing environmental issues

METHODOLOGY

- Simple, quantitative, and replicable
- Included a survey of conservation community to update existing datasets as well as identify and baseline new relevant datasets
- Conducted a scan of relevant, publically available data
- Effort broadly maps to the Conservation Alliance for Seafood Solutions' theory of change, first established in 2008

LIMITATIONS

- Limited time series data
- Difficult to attribute direct cause and effect relationship given market-orientation of grantee tools
- Quality, timeliness, and availability of data

Overview of Seafood Metrics Project

METRICS INCLUDED

Global status and trends in fishery health and exploitation

Certification data

Fishery Improvement Projects

Seafood trade flow data

Key commodity trade flow trends

Corporate- NGO partnerships

Greenpeace's scorecard data

Media and literature penetration

Industry event attendance

U.S. seafood consumption

Consumer interest and preferences

Enabling businesses and initiatives

GOAL: IMPACT ON THE WATER

PRODUCER-LEVEL PROGRESS

Individual producers have the capacity and support from the NGO and corporate communities to improve.

TRADE DYNAMICS

Demand generated by sustainable seafood commitments is transmitted through international trade and the ability to engage fisheries is a function of the market's global reach. Unlike the other categories, trade dynamics is not generally considered an area of NGO focus.

BUSINESS RELATIONSHIPS & SUPPLY CHAIN ENGAGEMENT

Influential businesses operationalize their commitments to sustainable seafood.

CONDITIONS FOR BUSINESS CHANGE

Influential businesses have the information, tools, and motivation to engage on sustainable seafood, based partly on consumer awareness and NGO partnerships.

POLICY CHANGE

A combination of advocacy and corporate support help drive improved government regulations and enforcement.

Policy timeline

E.U. policy update

U.S. policy update

Port State Measures

Executive Summary

- There are signs the sustainable seafood movement is reaching maturity, as growth in corporate commitments, certification,* and fisheries improvement projects* (FIPs) appears to have plateaued.
- The state of fisheries may now be improving in certain geographies, namely North American and Europe. However, it is difficult to draw direct, causal links between the conservation markets movement and widespread fisheries recovery.
- Major policy changes in Europe and the United States, coupled with public concerns about mislabeling and labor practices, are also helping to transform fishing practices across the globe.

* MSC and FIP volumes appear to have plateaued, although the number of fisheries and units of certification continue to grow each year.

IMPACT ON THE WATER

Impact on the water

METRICS INCLUDED

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Certification data

Fishery Improvement Projects

Industry - NGO partnerships

Traceability data

Retail/food service - NGO partnerships

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SUPPLY CHAIN ENGAGEMENT

A scientific knowledge base, traceability, and buyer initiatives lead companies in the middle of the supply chain to encourage sustainable production from their suppliers

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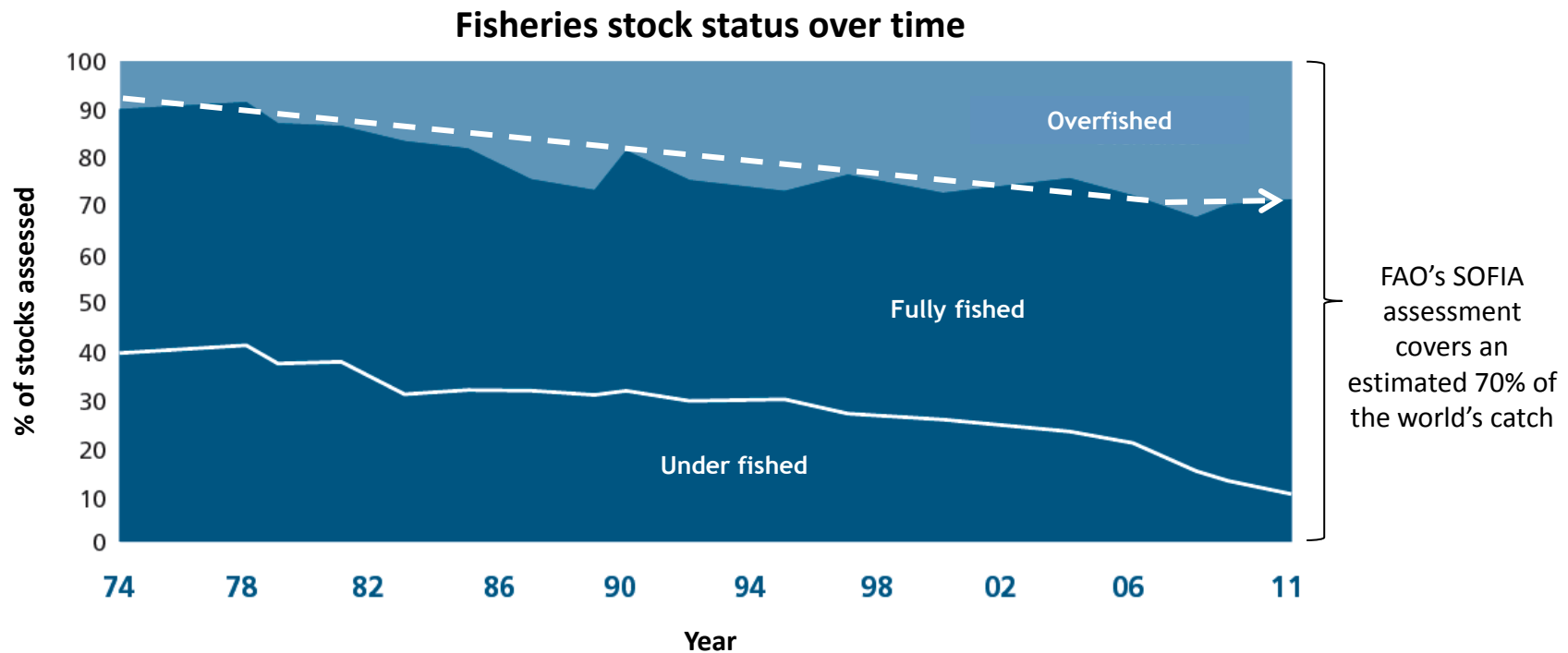
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FAO SOFIA: 30% of stocks are overfished; this has remained stable for the past five years

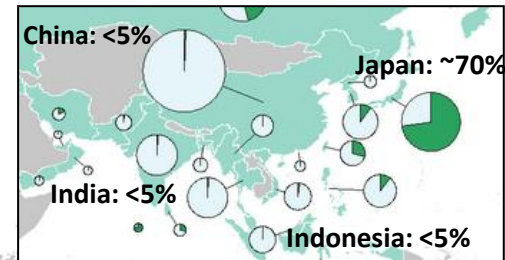


Over the past few decades the number of overfished stocks has increased significantly, but over the past few years the number of overfished stocks appears to have stabilized even as more and more stocks are fully-fished.

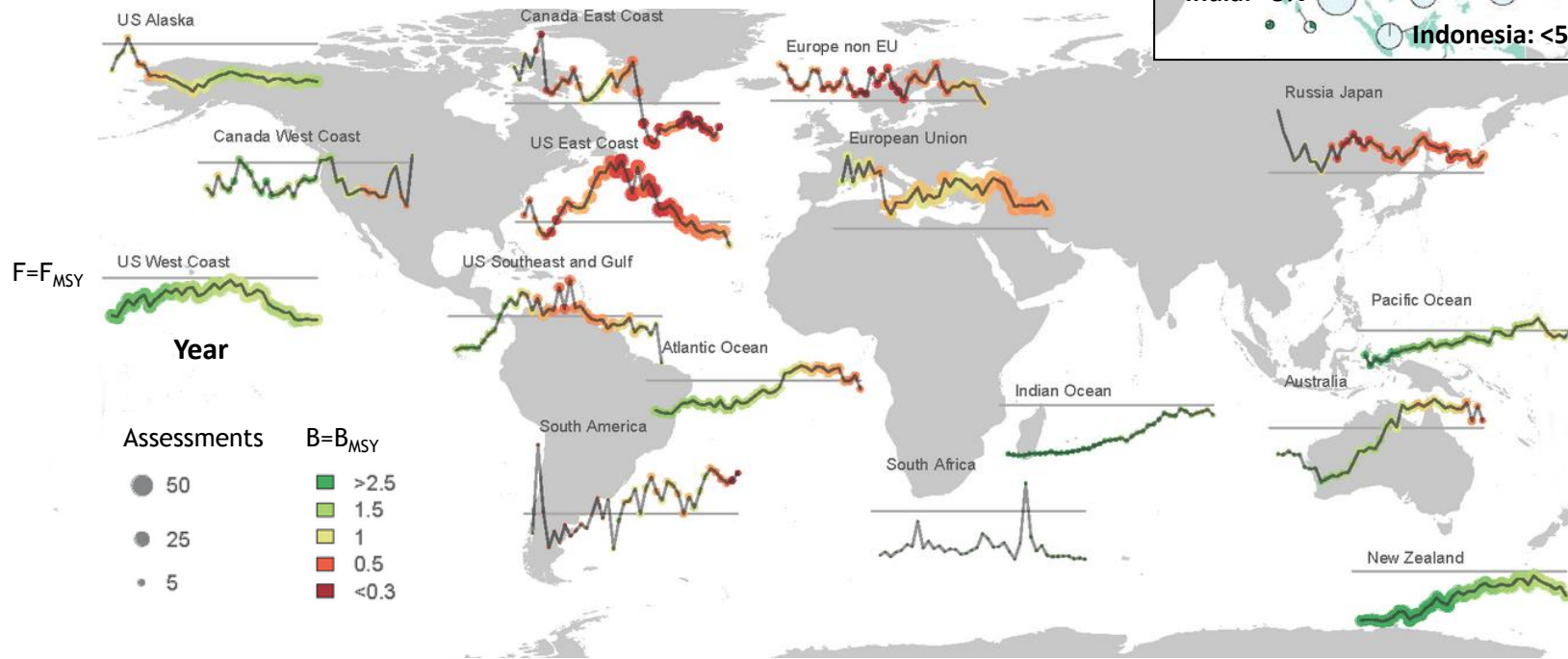
RAM Legacy: Fishing pressure may be rising in Asia, but data deficiencies prevent greater certainty or insight

Based on the available data, fishing pressure appears to be rising in Asia. However, RAM database coverage in most Asian countries represents less than 20% of total catch, so uncertainty is high.

% of catch covered by RAM Legacy

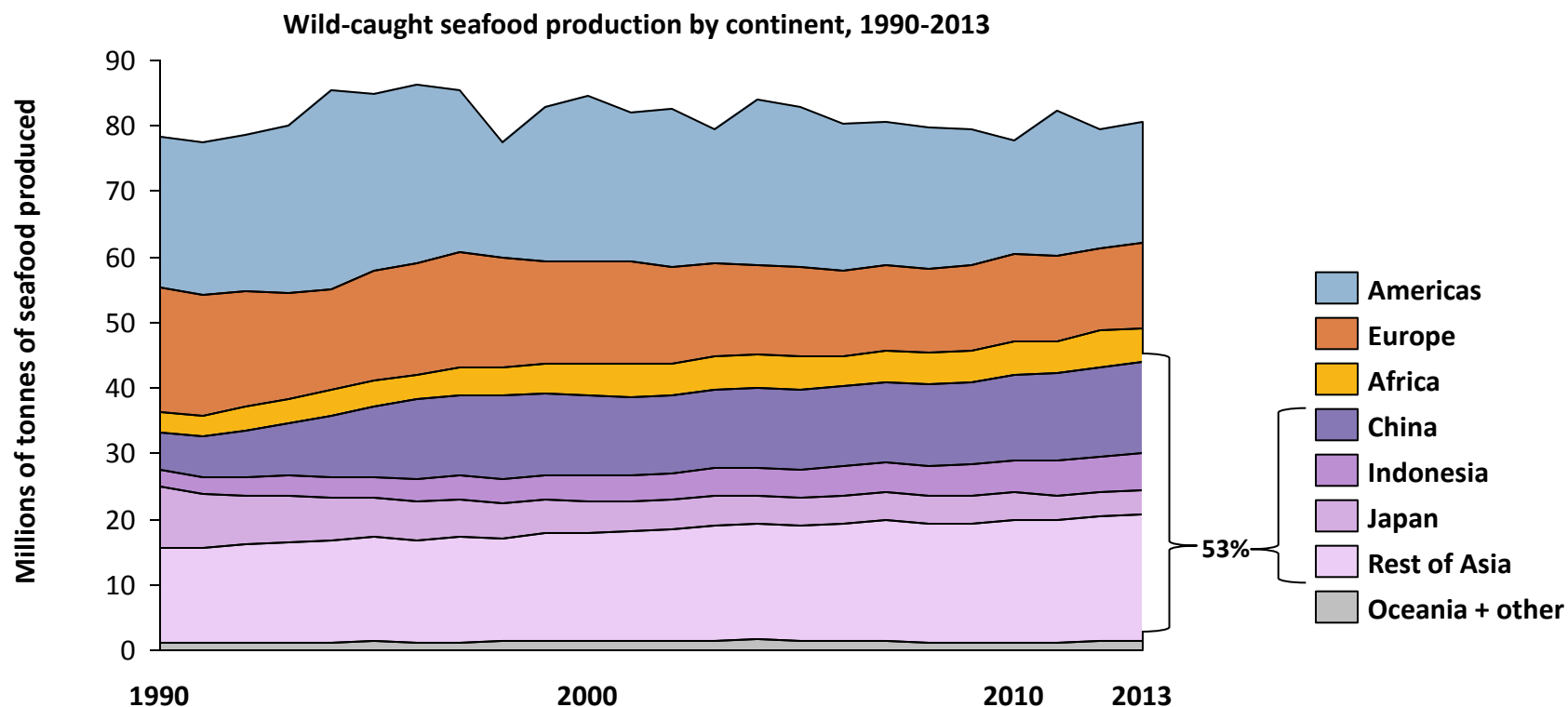


Fisheries mortality



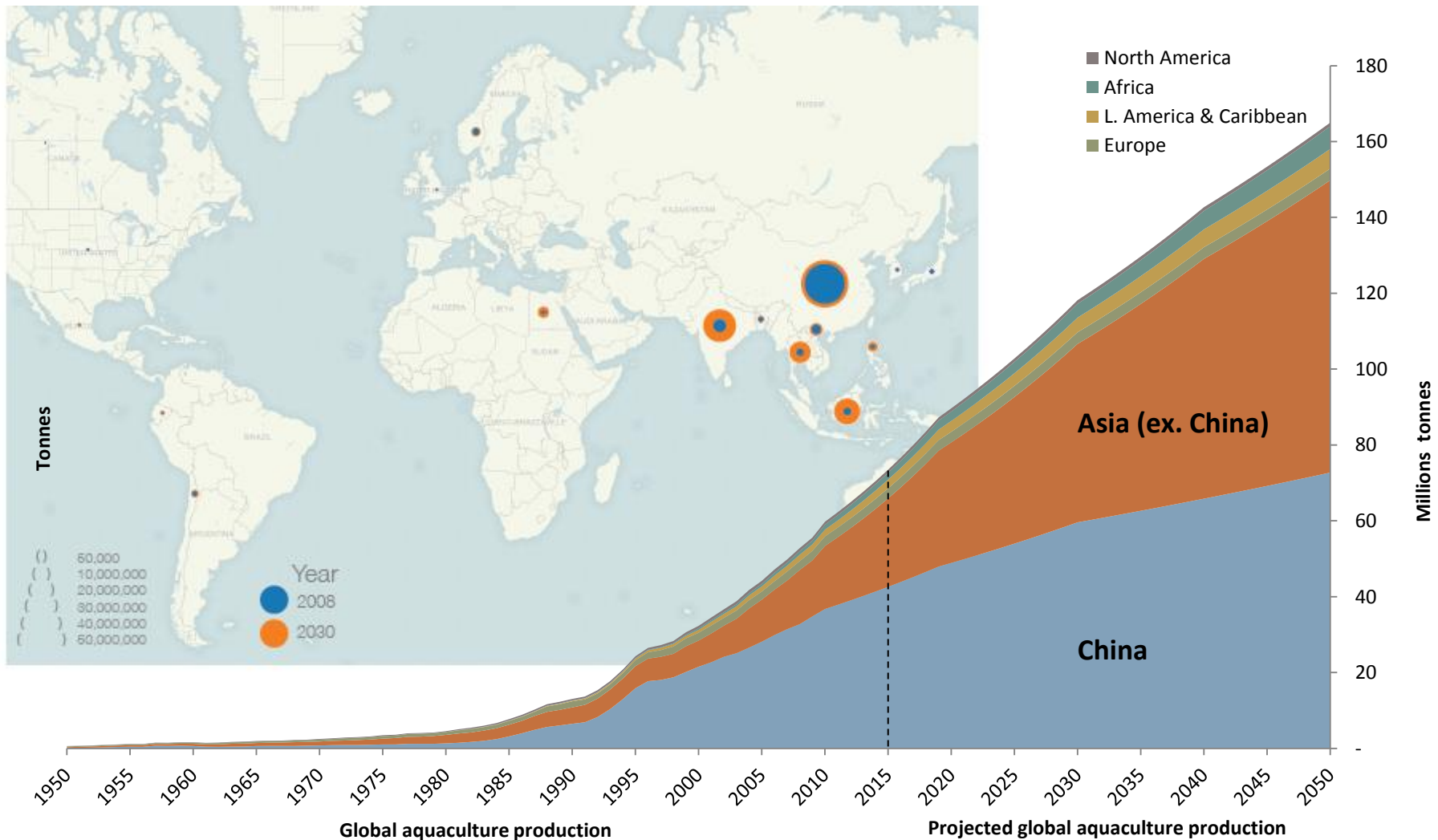
Vertical position represents overfishing, with lower numbers representing less fishing pressure. Color represents the proportion of the stocks in the region that are overfished. Thickness of lines is proportional to how many stocks are contained in the data base.

Asia now accounts for more than 50% of global wild-caught production; the overall condition of these stocks is unclear



Aquaculture has become a much more significant component of the global seafood landscape and continues to grow as capture production plateaus

Projected growth in aquaculture production, 2008-2030/2050



PRODUCER-LEVEL PROGRESS

Producer-level progress

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Market-based interventions influence over 20% of wild-caught seafood globally; whitefish, salmon, and tuna are the most engaged commodities

Total landing volume in FIP and the MSC program by species group

	# of All FIP Fisheries† 149		# of MSC Full Assessment UoC 98		# of MSC Certified UoC 251		# of All FIP & MSC Fisheries 498	
	FIPs Only		MSC Full Assessment		MSC Certified		Total	
Total Landings in FIPs	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings
Miscellaneous fish	29	0.1%	204	0.7%	542	1.7%	775	2.5%
Small pelagics	3,397	19.0%	405	2.3%	907	5.1%	4,709	26.3%
Whitefish	846	9.2%	647	7.0%	3,700	40.2%	5,193	56.5%
Major tuna species*	3,744	73.5%	359	7.1%	660	13.0%	4,763	93.5%
Other tunas, bonitos, billfishes	101	4.4%	1	0.1%	4	0.2%	106	4.6%
Squid	227	5.6%	48	1.2%	0	0.0%	275	6.8%
Shrimp	207	6.2%	65	2.0%	251	7.5%	523	15.6%
Molluscs	0	0.0%	66	2.6%	264	10.4%	330	13.0%
Crabs, lobsters, and crustaceans	157	5.9%	120	4.5%	176	6.6%	453	17.0%
Salmon and diadramous fish	10	1.0%	2	0.2%	473	45.5%	485	46.6%
Carp	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sharks	0	0.0%	1	0.1%	3	0.4%	4	0.5%
Total	8,719	10.6%	1,918	2.3%	6,980	8.5%	17,617	21.5%

Given data collection limitations, **FIP landings estimates are subject to potentially significant inflation, particularly for major tuna species.** For many fisheries, like tuna, there is no way of differentiating between landings participating within or outside of a FIP, especially when a FIP covers an entire stock at a national level or by engaging RFMOs. Estimating landed tonnage of FIPs is problematic, as 100% of fisheries' or stocks' total landings are often counted in the reported landed tonnage for a FIP, as long as some fraction of the fishery's boats are participating in the FIP or if the FIP stakeholders are engaging national or regional management bodies.

† Landings exclude landings associated with Stage 0, Stage 1, and Stage 6 (MSC-certified) FIPs. ISSF associated landings are included. In instances where there was overlap between reported FIP landings and MSC-certified landings (in the case of Stage 6 FIPs) landed tonnage was counted towards MSC landings.

* Major tuna species include: Albacore, Bigeye, Bluefin, Little Tunny (Black Skipjack), Skipjack, and Yellowfin Tuna.

Global landings varied annually, so both the numerator and denominator are dynamic when calculating the percentage of global landings engaged.

Source: CEA survey of SFP, WWF, MSC, Ocean Outcomes, ISSF, MDPI, GMRI, CeDePesca, FisheryImprovementProjects.org, FishStatJ

The number FIP and MSC fisheries has grown; volumes are down from 2013

Total landing volume in FIP and the MSC program by species group over time

2012	# of All FIP Fisheries† 52		# of MSC Full Assessment UoC 105		# of MSC Certified UoC 170		# of All FIP & MSC Fisheries 327	
	FIPs		MSC Full Assessment		MSC Certified		Total	
	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings
	All Species							
Total	10,490	11.8%	2,130	2.4%	7,080	8.0%	19,700	22.2%

2013	# of All FIP Fisheries† 103		# of MSC Full Assessment UoC 99		# of MSC Certified UoC 207		# of All FIP & MSC Fisheries 409	
	FIPs		MSC Full Assessment		MSC Certified		Total	
	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings
	All Species							
Total	12,253	15.0%	1,292	1.6%	7,807	9.5%	21,353	26.1%

2014	# of All FIP Fisheries† 149		# of MSC Full Assessment UoC 98		# of MSC Certified UoC 251		# of All FIP & MSC Fisheries 498	
	FIPs		MSC Full Assessment		MSC Certified		Total	
	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings	000s Tonnes	Percent of Global Landings
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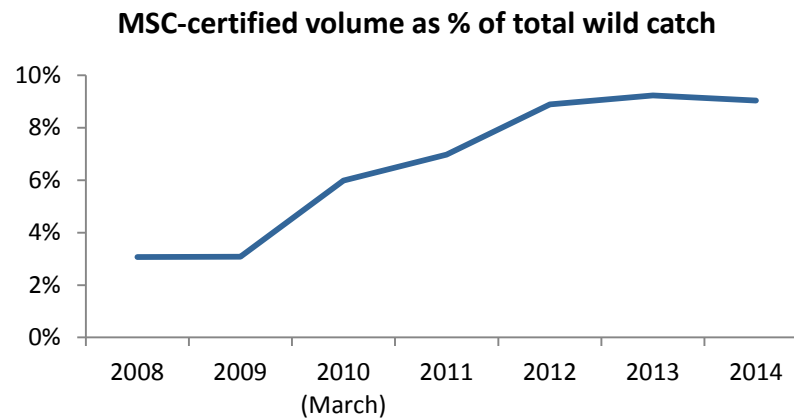
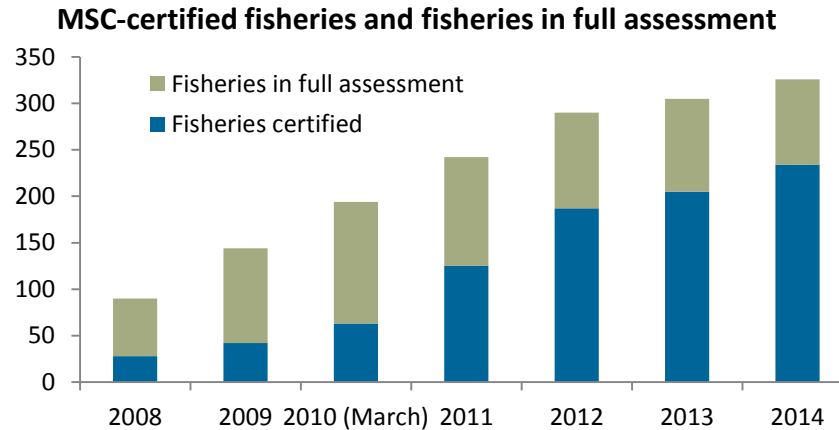
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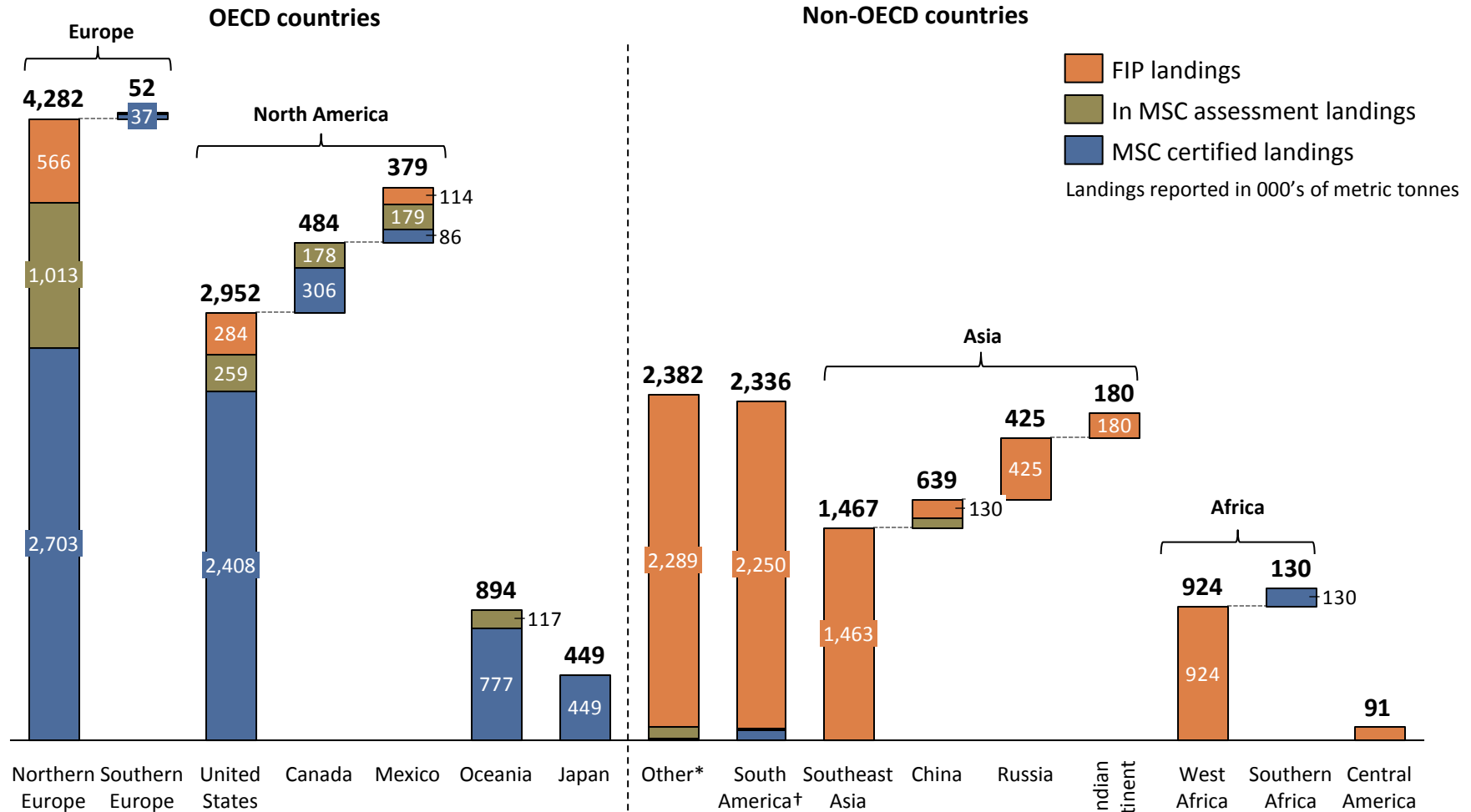
The number of MSC-certified fisheries continues to increase, though certified volume has remained roughly constant for three years



PRODUCER-LEVEL PROGRESS

While Europe and North America have more MSC-certified landings, the rest of the world has more landings in FIPs

Global landings engaged in sustainable seafood interventions[‡]



[‡] - In instances where there was overlap between reported FIP landings and MSC-certified landings (in the case of Stage 6 FIPs) landed tonnage was counted towards MSC landings.

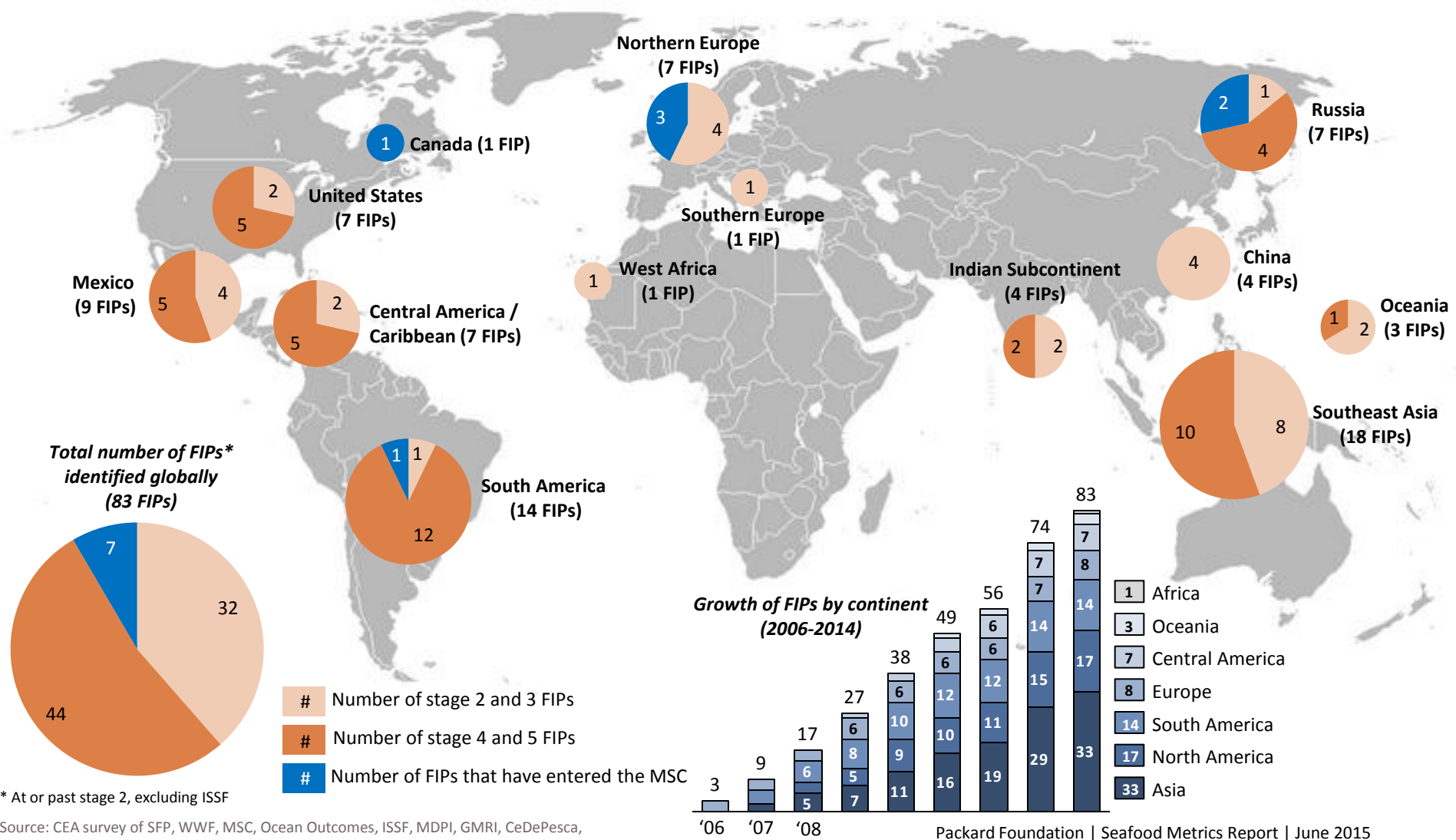
Source: CEA survey of SFP, WWF, MSC, Ocean Outcomes, ISSF, MDPI, GMRI, CeDePesca, FisheryImprovementProjects.org, FishStatJ

*Primarily ISSF associated landings that extend beyond the jurisdiction of a single country

† Chile is an OECD member and is the only one in S. America

PRODUCER-LEVEL PROGRESS

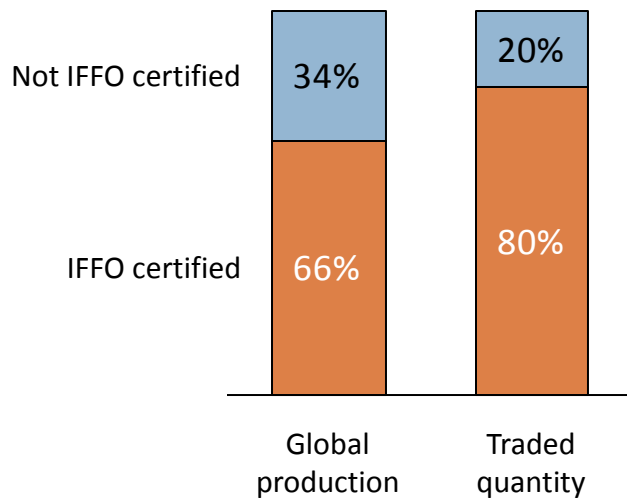
Fishery Improvement Projects (FIPs) continue to grow in popularity worldwide; FIPs proliferated most quickly in Southeast Asia in recent years



PRODUCER-LEVEL PROGRESS

Fishmeal and fish oil producers have chosen IFFO RS as their sustainability standard of choice, which is accepted by aquaculture certifications

Most fishmeal and fish oil is IFFO certified



Geographic scope of IFFO RS certified plants



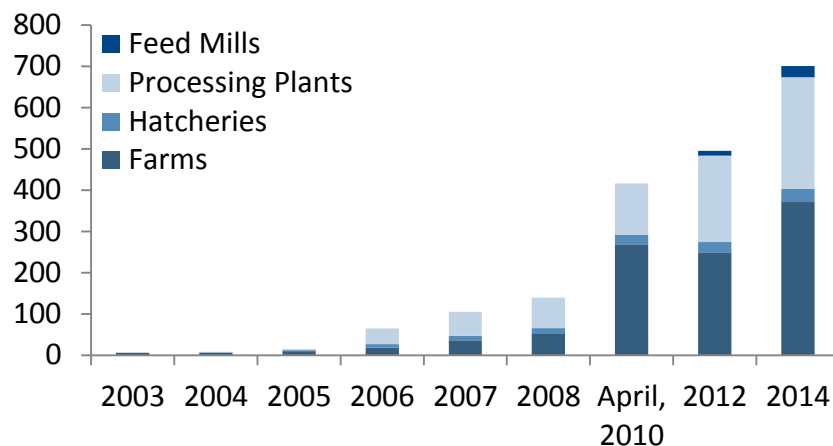
Other eco-labels have also certified a number of fisheries globally



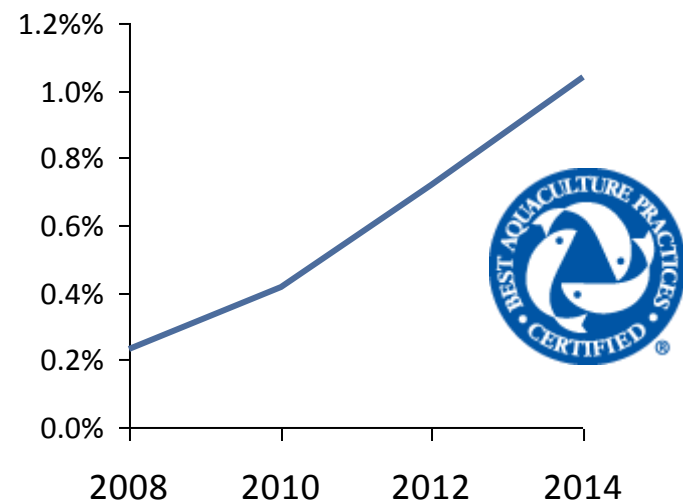
PRODUCER-LEVEL PROGRESS

The number of GAA and ASC farms and amount of certified volume continues to increase, though still remains a small portion of global volume

GAA certified farms, hatcheries, feed mills and processing plants



GAA certified farm volume as share of global aquaculture



Scale and reach of ASC

	March 2013	Oct. 2014
Number of certified farms	26	104
Number of supplier countries	6	14
Number of countries with sales of ASC products	10	40
Number of chain of custody certified companies	134	415

Trade dynamics

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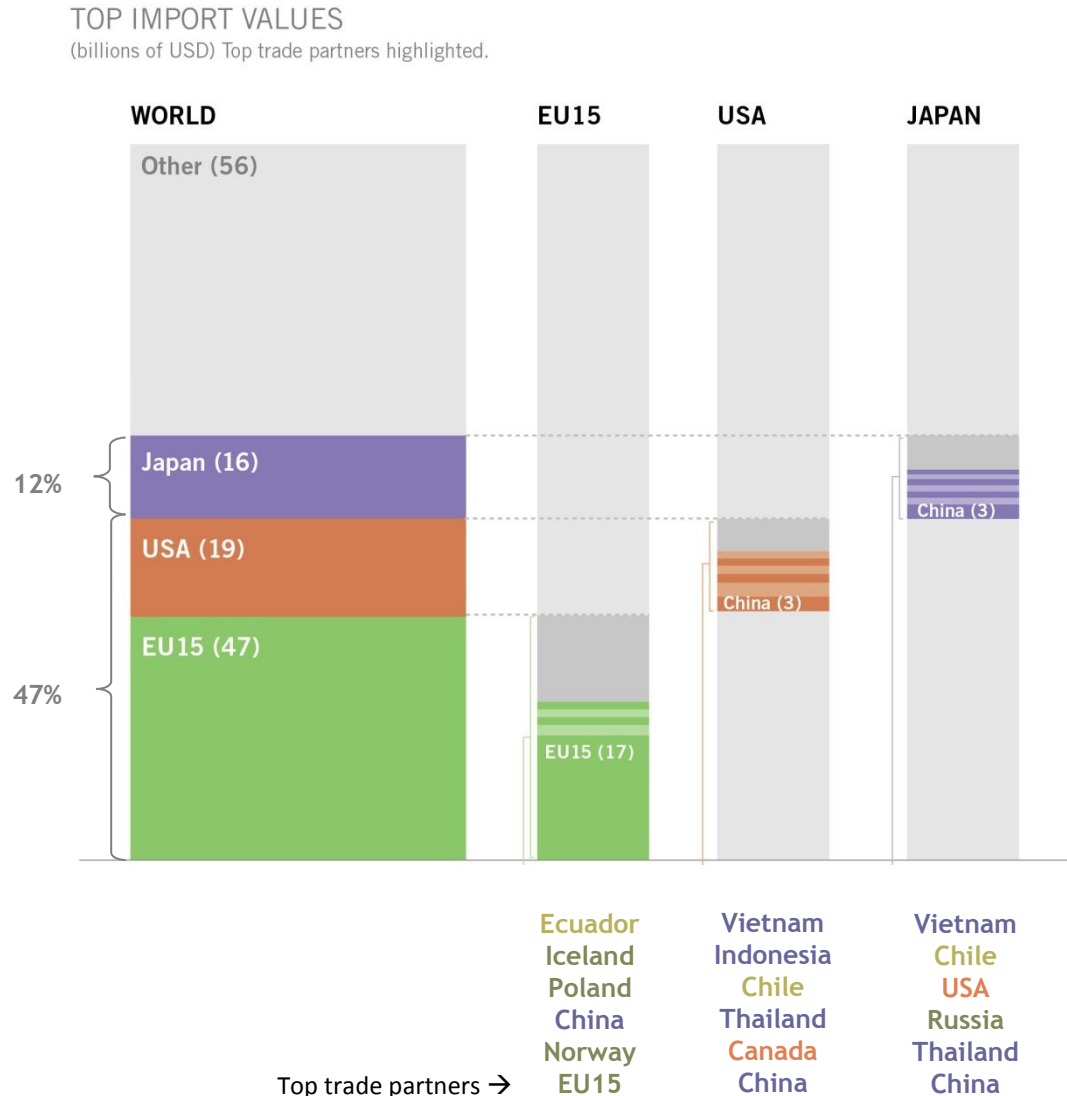
Policy timeline

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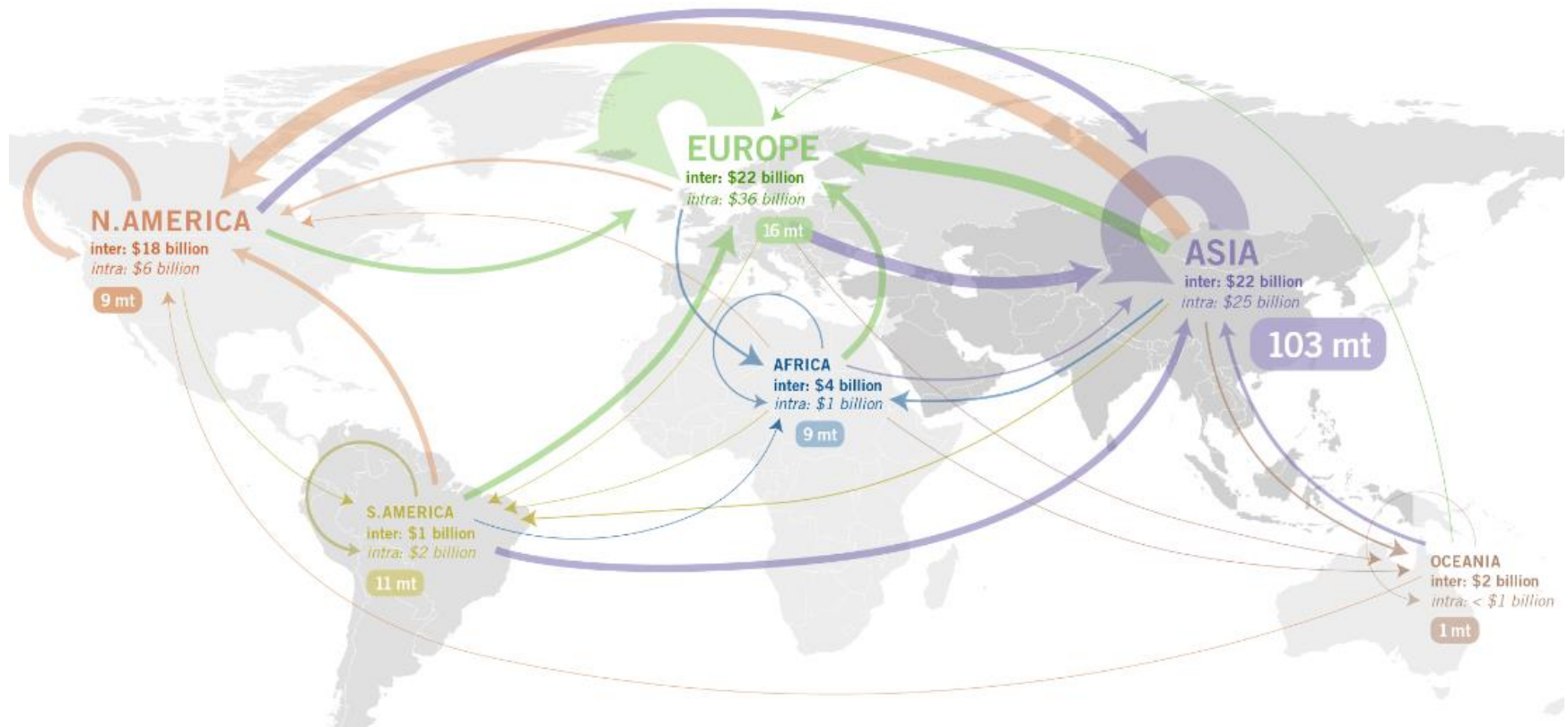
Traceability

The United States and the EU15 account for ~47% of global seafood imports; Japan accounts for an additional 12%



Seafood imports 2013 (billion USD)

International trade empowers the market conservation movement by transmitting demand for sustainability to countries, fisheries needing reform

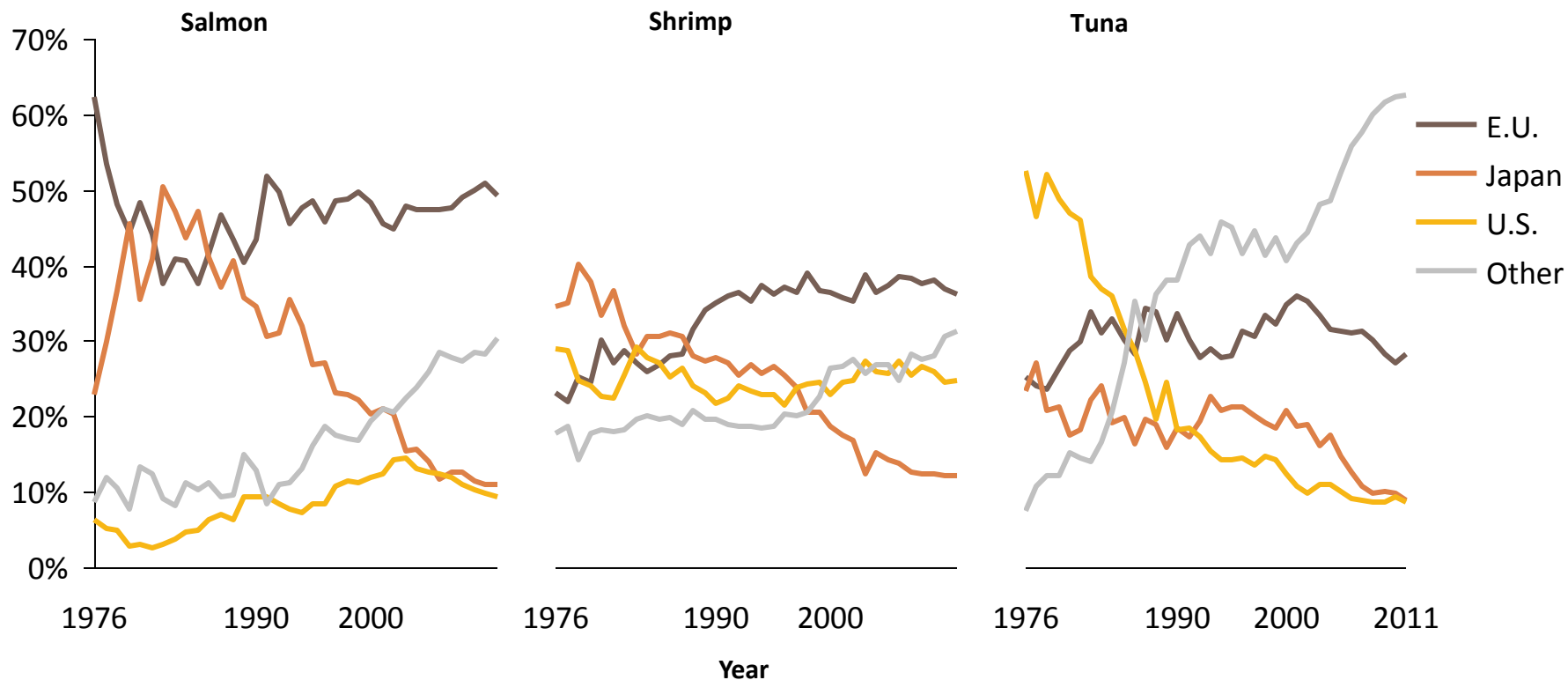


Trade data may be skewed by re-export.

Source: International Trade Centre, trademap.org.

Commodities of particular interest – salmon, shrimp, tuna

% of global imports



Business relationships

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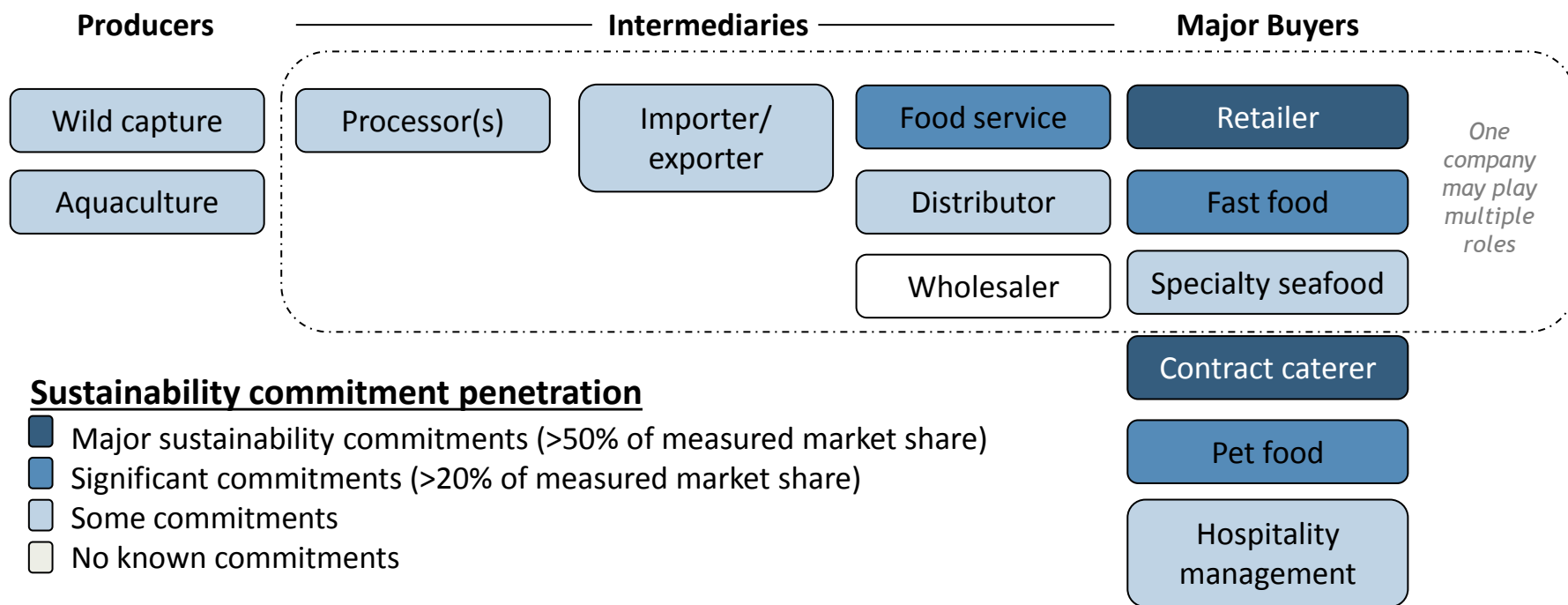
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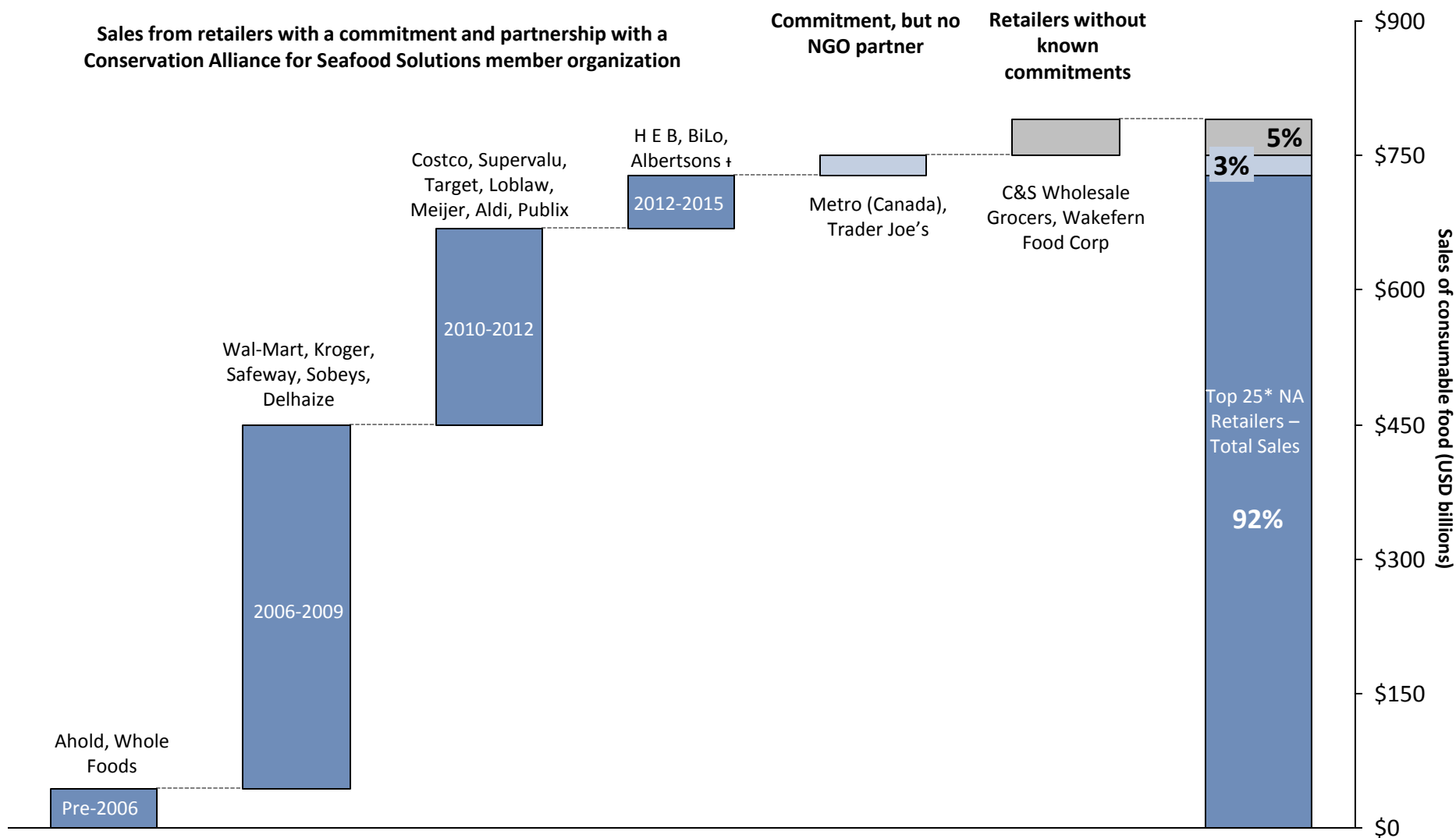
BUSINESS RELATIONSHIPS

A wide range of buyers have made sustainable seafood commitments throughout the supply chain



BUSINESS RELATIONSHIPS

Top 25* North American retailers' commitments to sustainable seafood have leveled off, with over 90% of the market share engaged



+ Will adopt Safeway's commitment as they complete their merger.

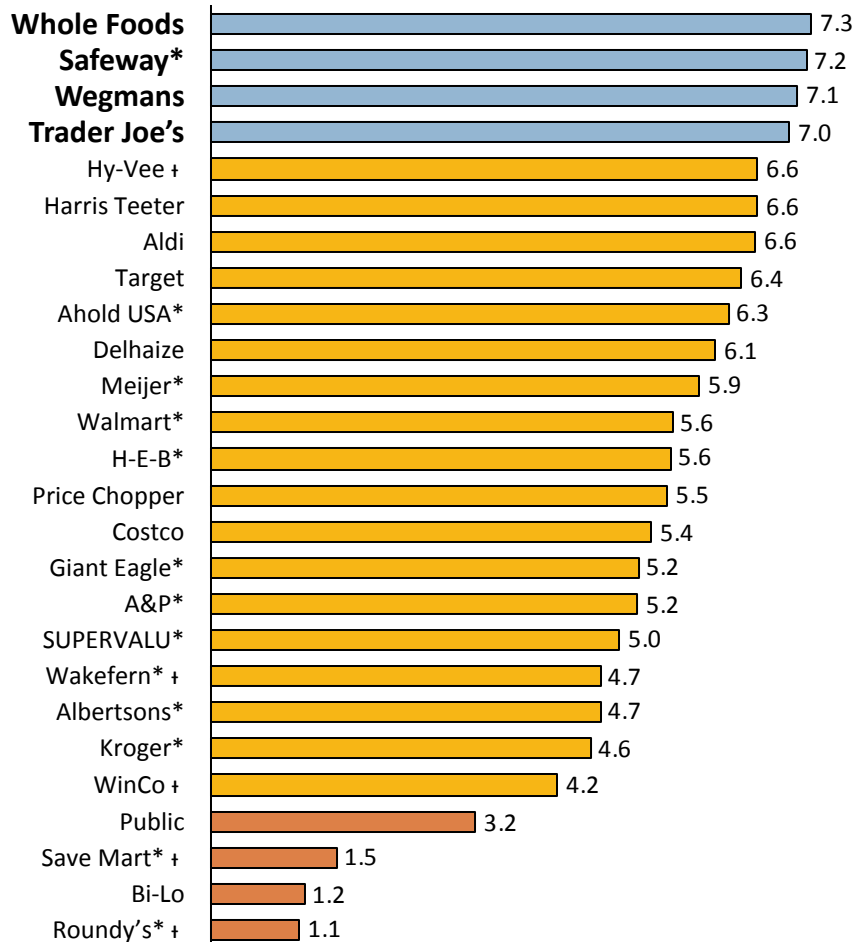
* 7-Eleven, CVS Health, Dollar General, and Walgreen Co were removed due to lack of seafood sales

Source: Supermarket News, press releases, and personal communications with Conservation Alliance member organizations

BUSINESS RELATIONSHIPS

Retailer sustainability scores assigned by Greenpeace have improved significantly year after year

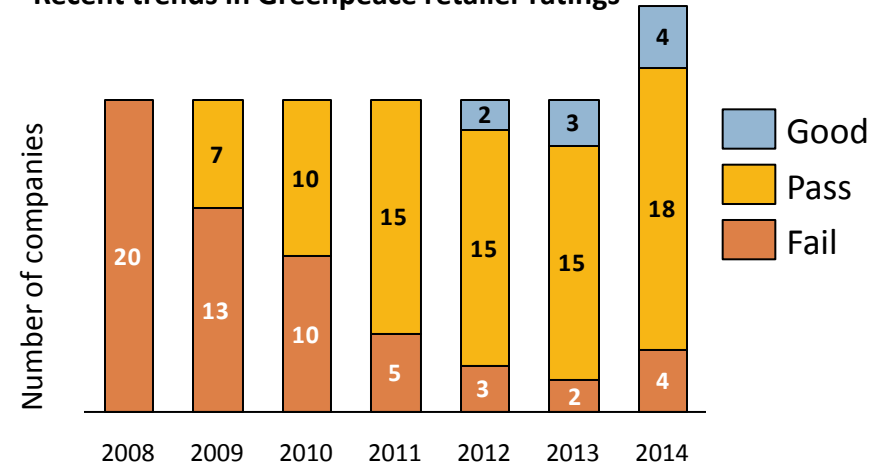
2014 Greenpeace Seafood Retailer Scorecard



* Denotes parent company with multiple store banners.

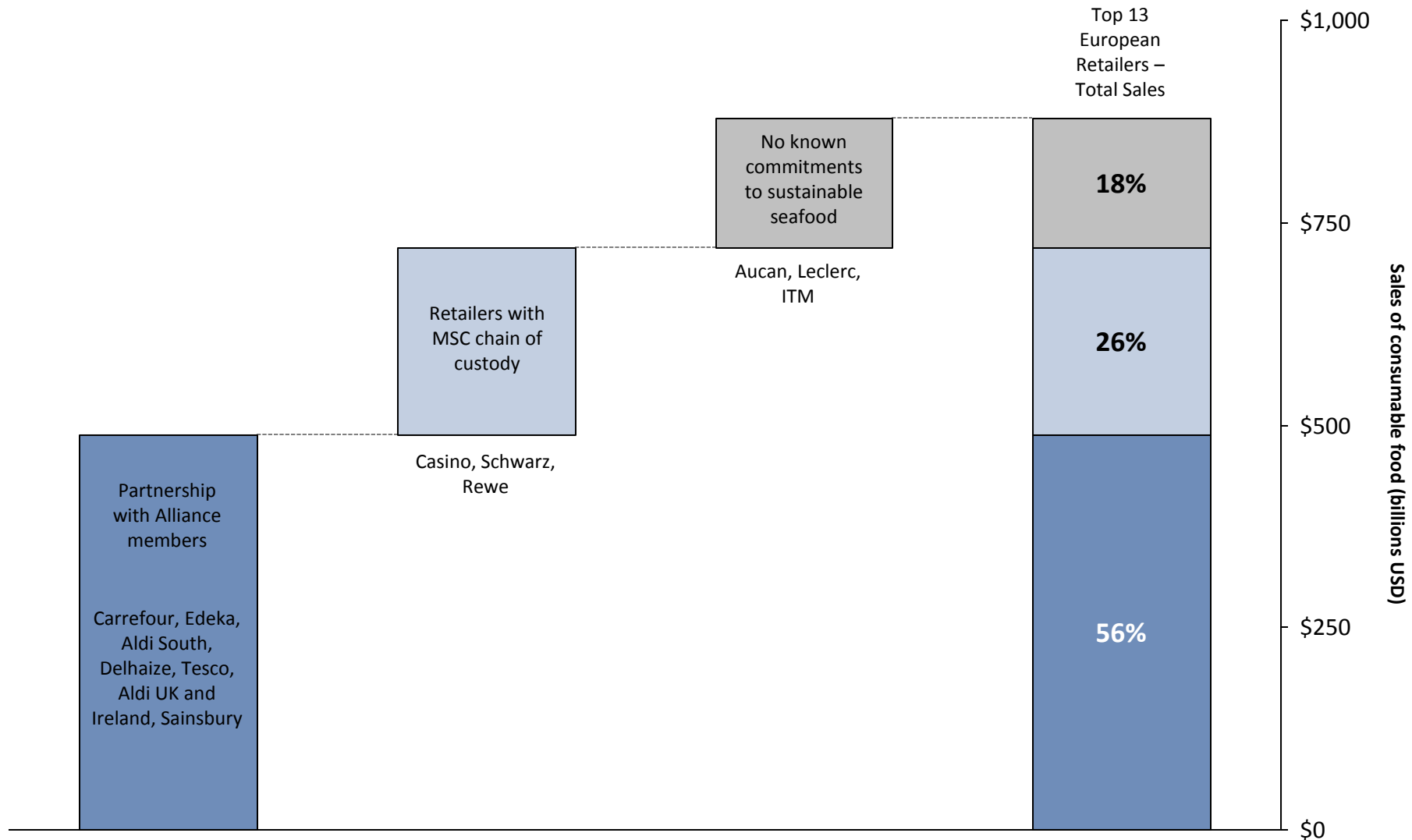
† Not included in previous years' reports.

Recent trends in Greenpeace retailer ratings



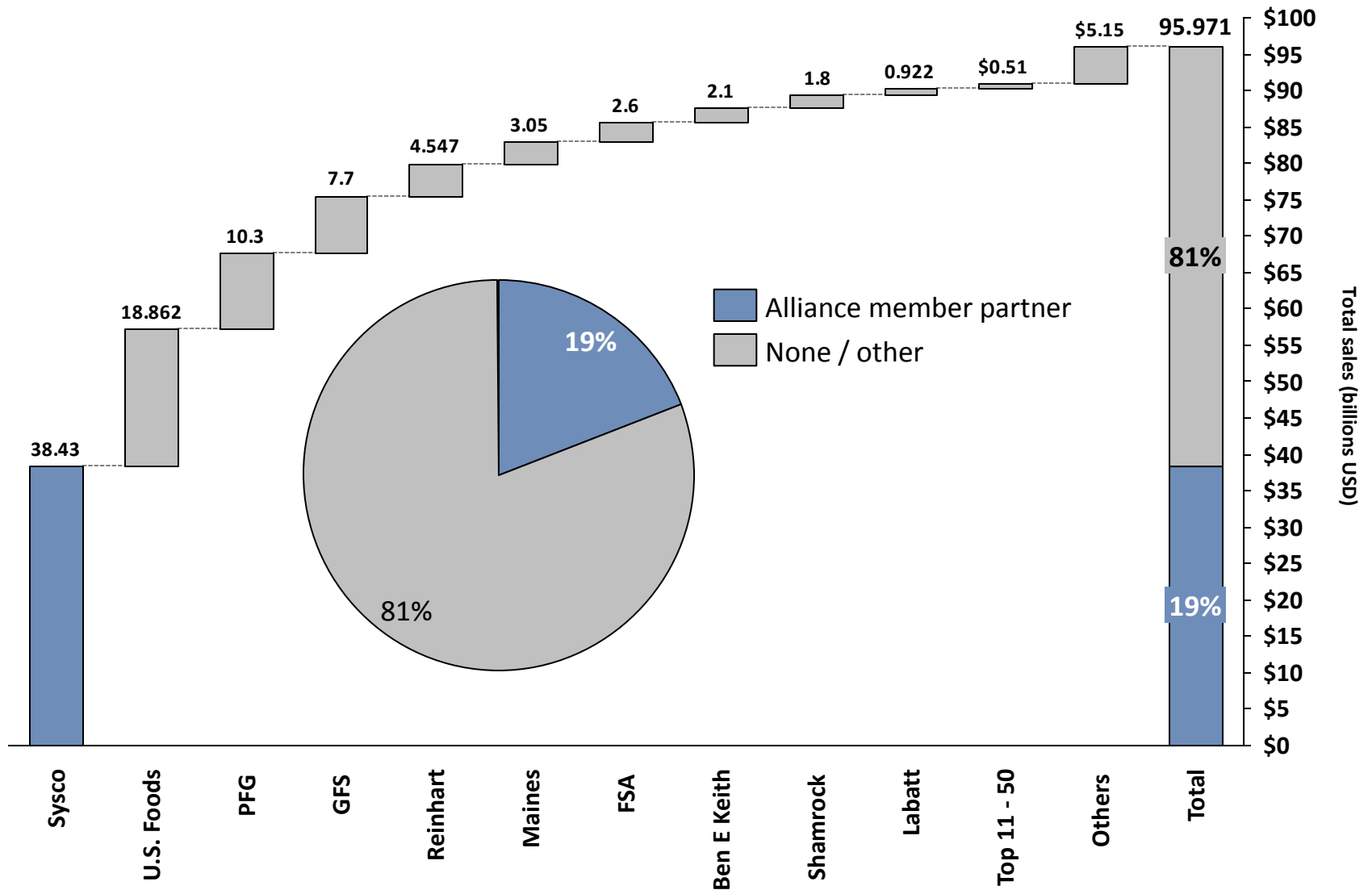
BUSINESS RELATIONSHIPS

Of the top 13 European retailers, the majority have also made commitments to sustainable seafood



BUSINESS RELATIONSHIPS

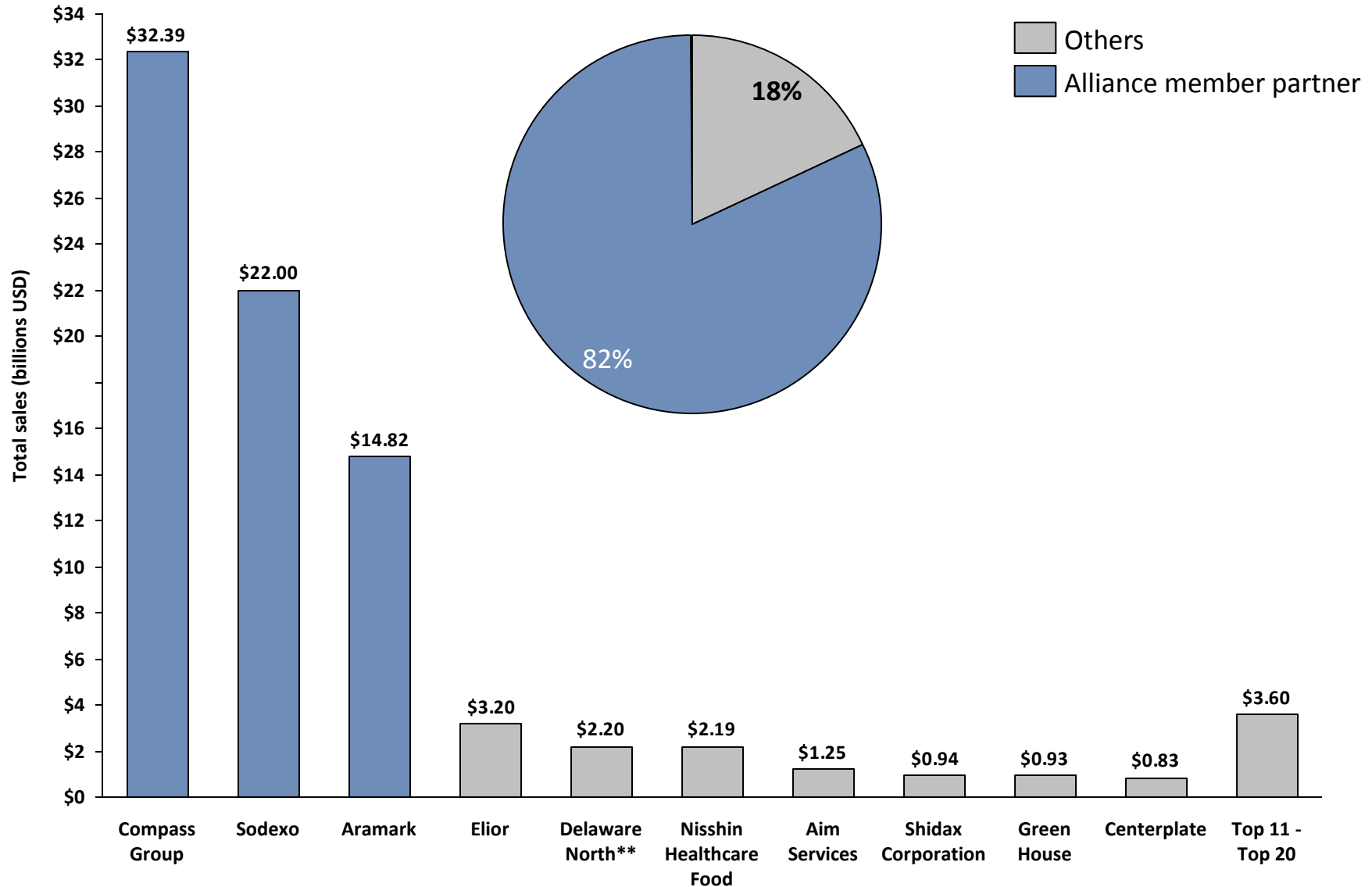
North American broadline foodservice is more fragmented. Apart from Sysco, there is little known engagement.



*Sales as of 2013

BUSINESS RELATIONSHIPS

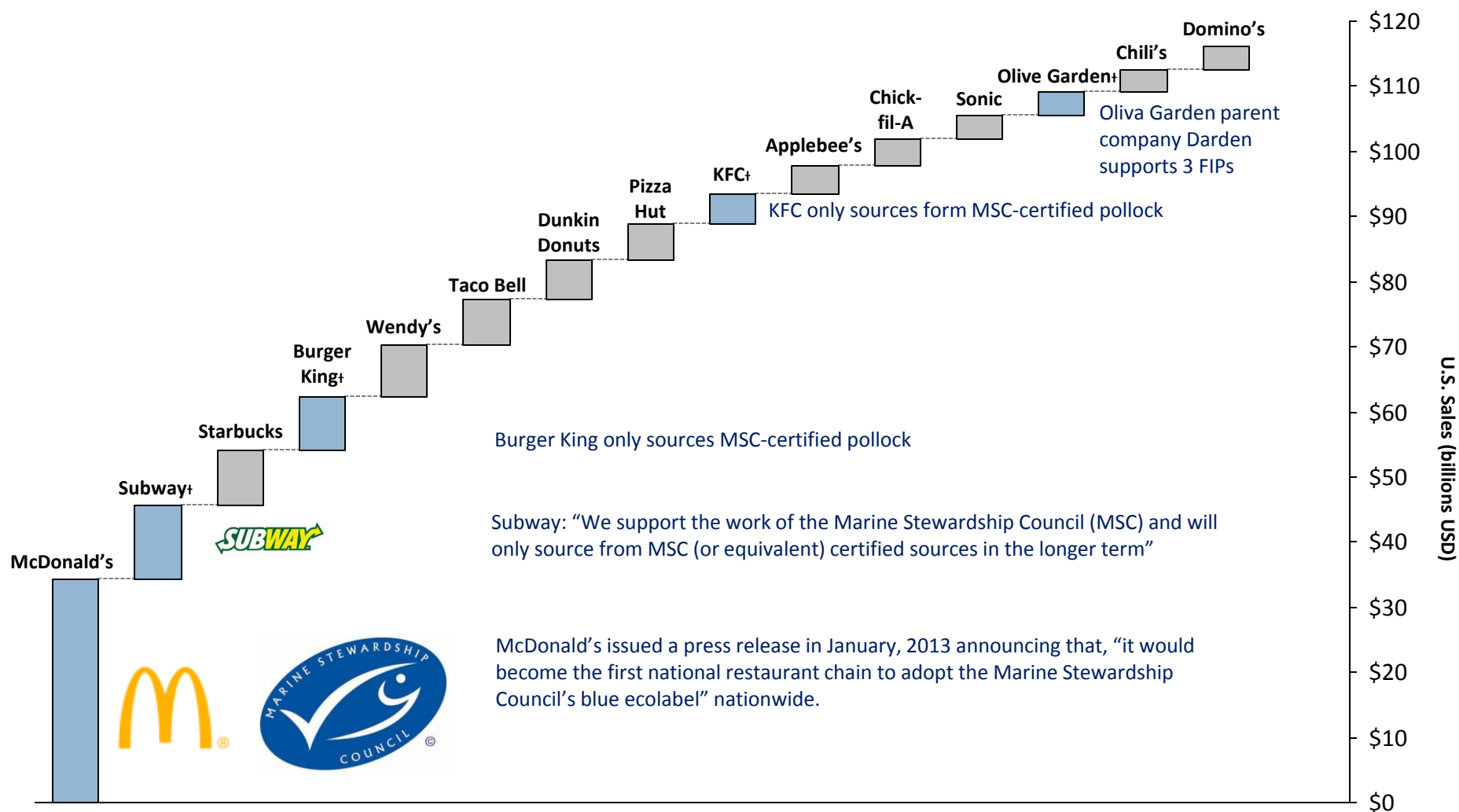
Of the top 20 global contract catering companies, the three largest have commitments



*Sales as of 2013; **Delaware North cites MBA's SFW program as helping guide its procurement decisions.

BUSINESS RELATIONSHIPS

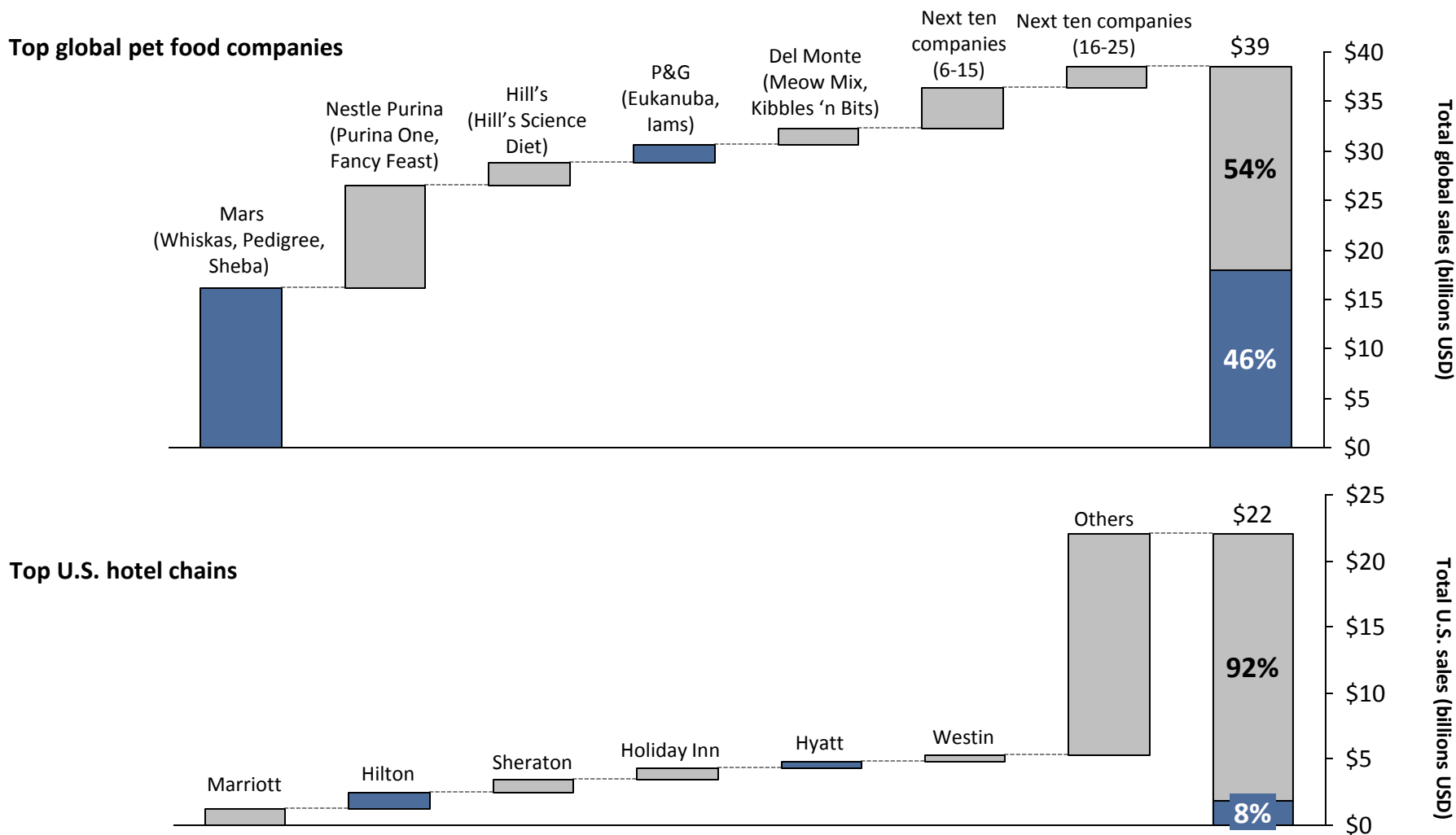
Top-15 U.S. fast food restaurants by sales; an increasing number of restaurants source MSC-certified pollock



† Commitment newly documented since 2013 report

BUSINESS RELATIONSHIPS

Among other major seafood buyers (pet food companies, hotel chains), only a handful have sustainable seafood commitments



Sea Pact Distributors are building sustainability into supply chains

Sea Pact members span a range of geographies



Vancouver



Chicago



Boston



Los Angeles



Toronto



Denver



Halifax



Baltimore



Boston

CREATING CONDITIONS FOR BUSINESS CHANGE

Creating conditions for business change

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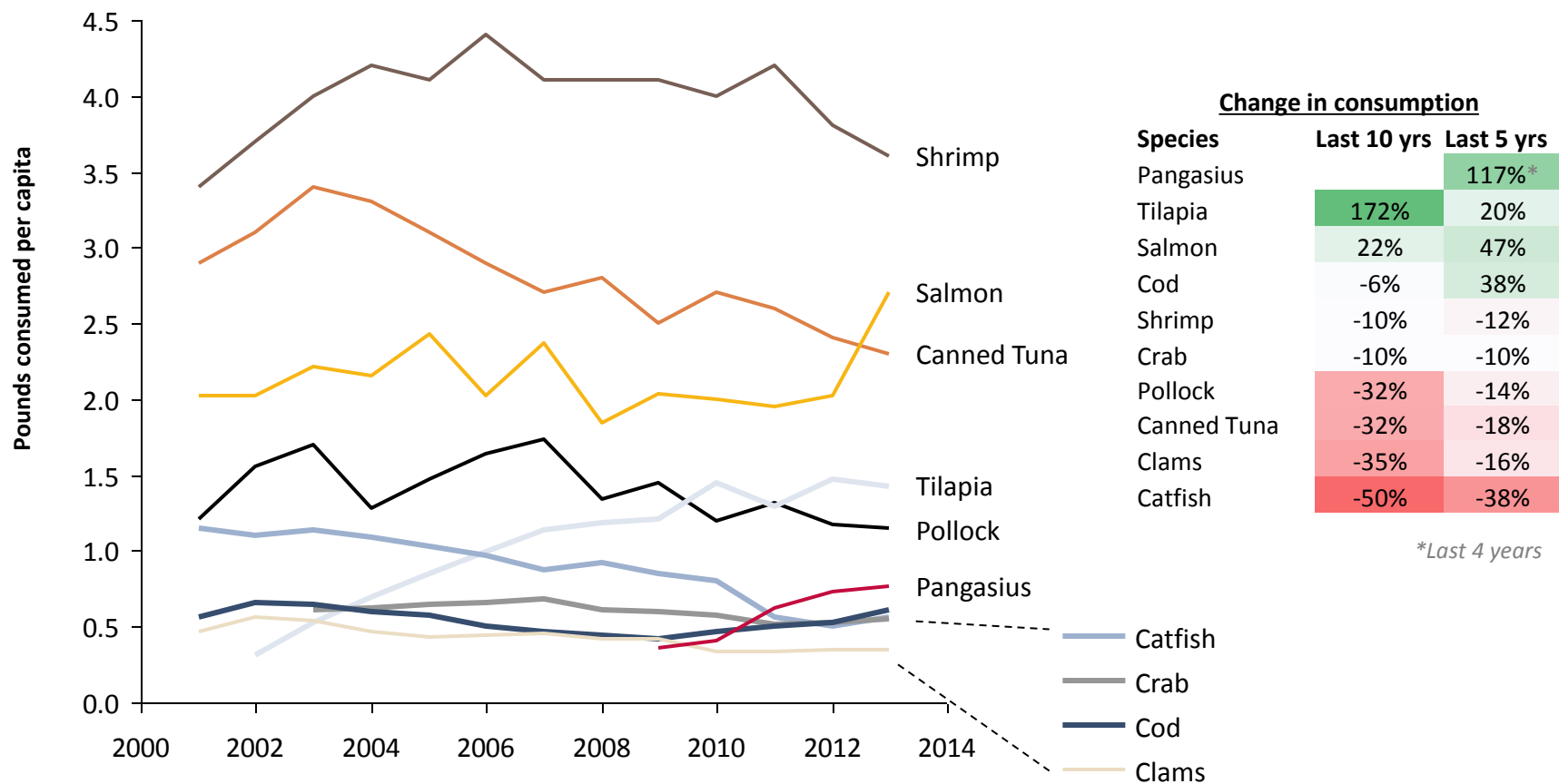
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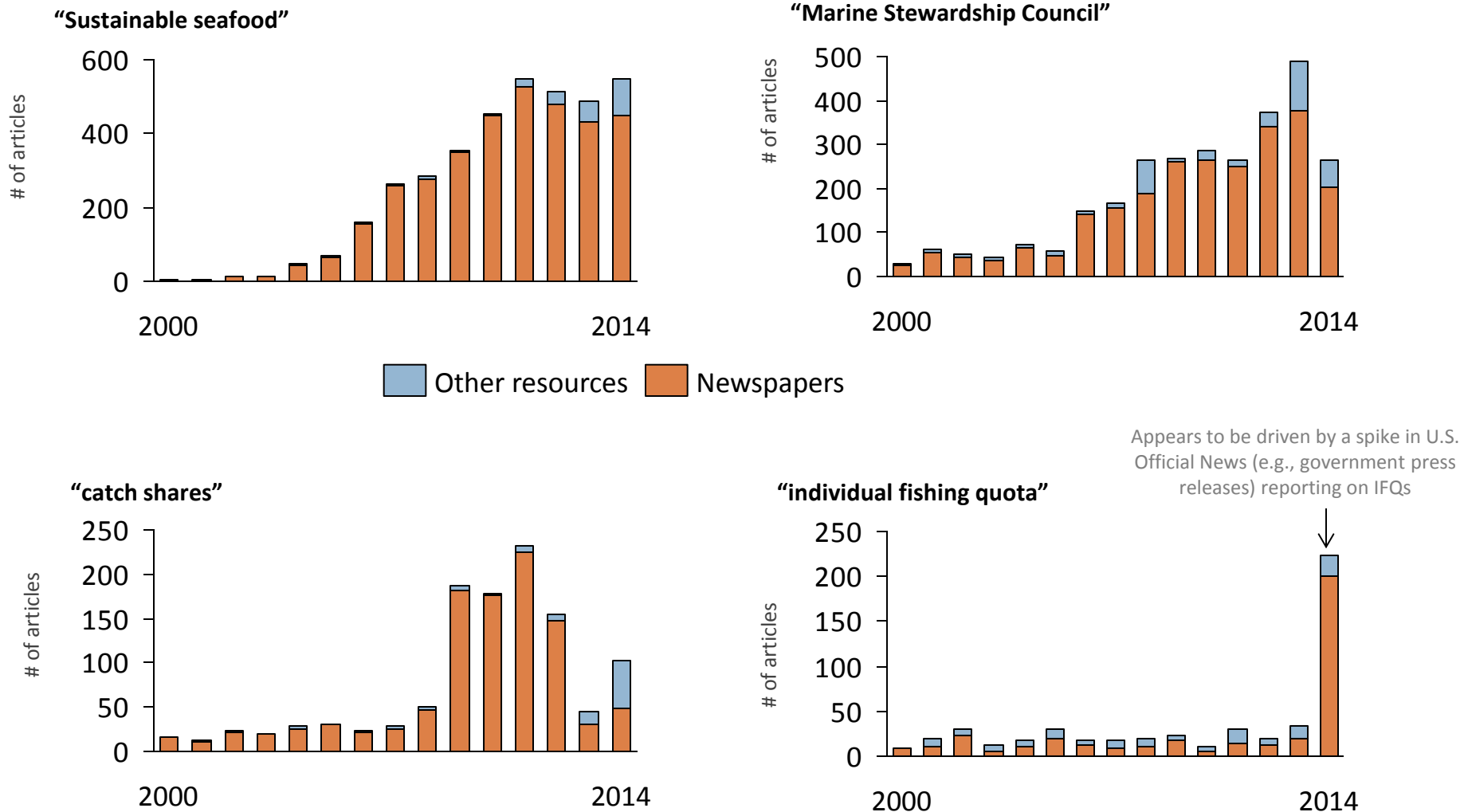
CREATING CONDITIONS FOR BUSINESS CHANGE: CONSUMERS

Shrimp, salmon, and canned tuna remain Americans' preferred seafood choices. The consumption of farm-raised whitefish is growing quickly.



CREATING CONDITIONS FOR BUSINESS CHANGE: MEDIA

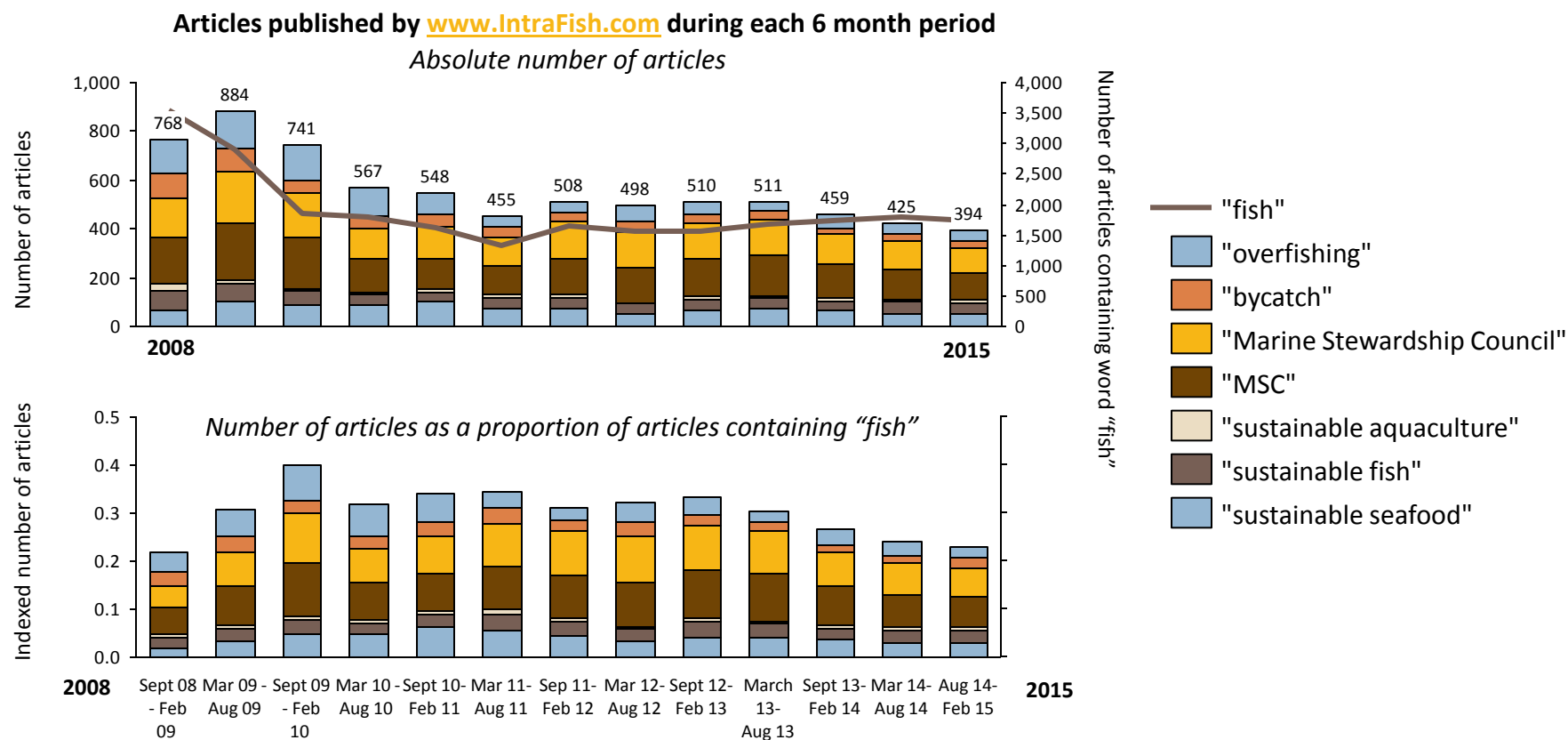
General media coverage of sustainable seafood has stabilized or generally increased over the past 15 years



Note: not controlled for number of articles in the database each year.

CREATING CONDITIONS FOR BUSINESS CHANGE: MEDIA

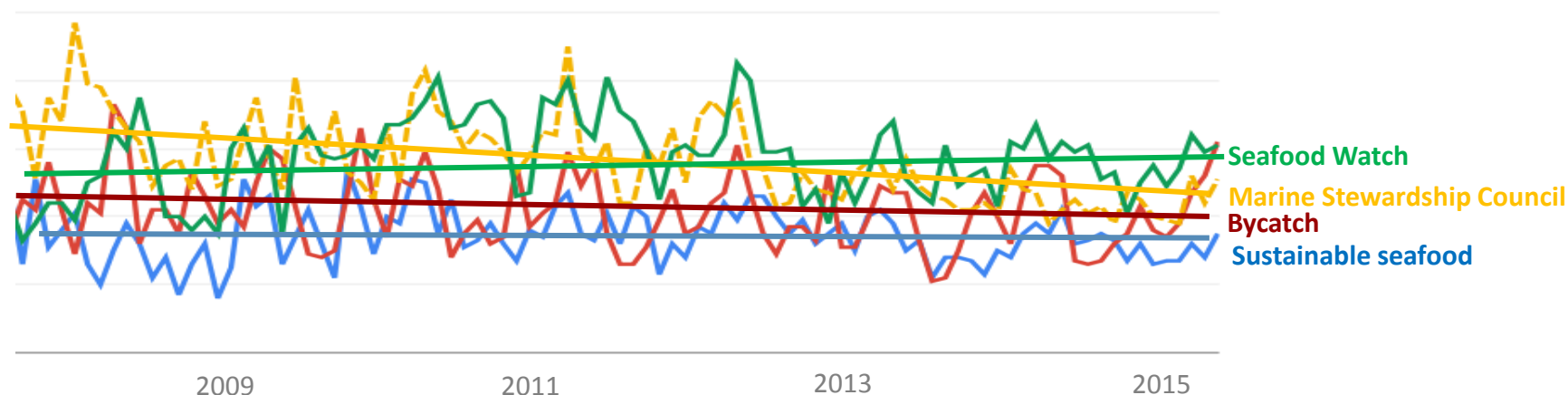
Dialogue about sustainable seafood on Intrafish.com (a seafood industry website) has fallen slightly



Consumer searches around sustainable seafood issues are generally stable

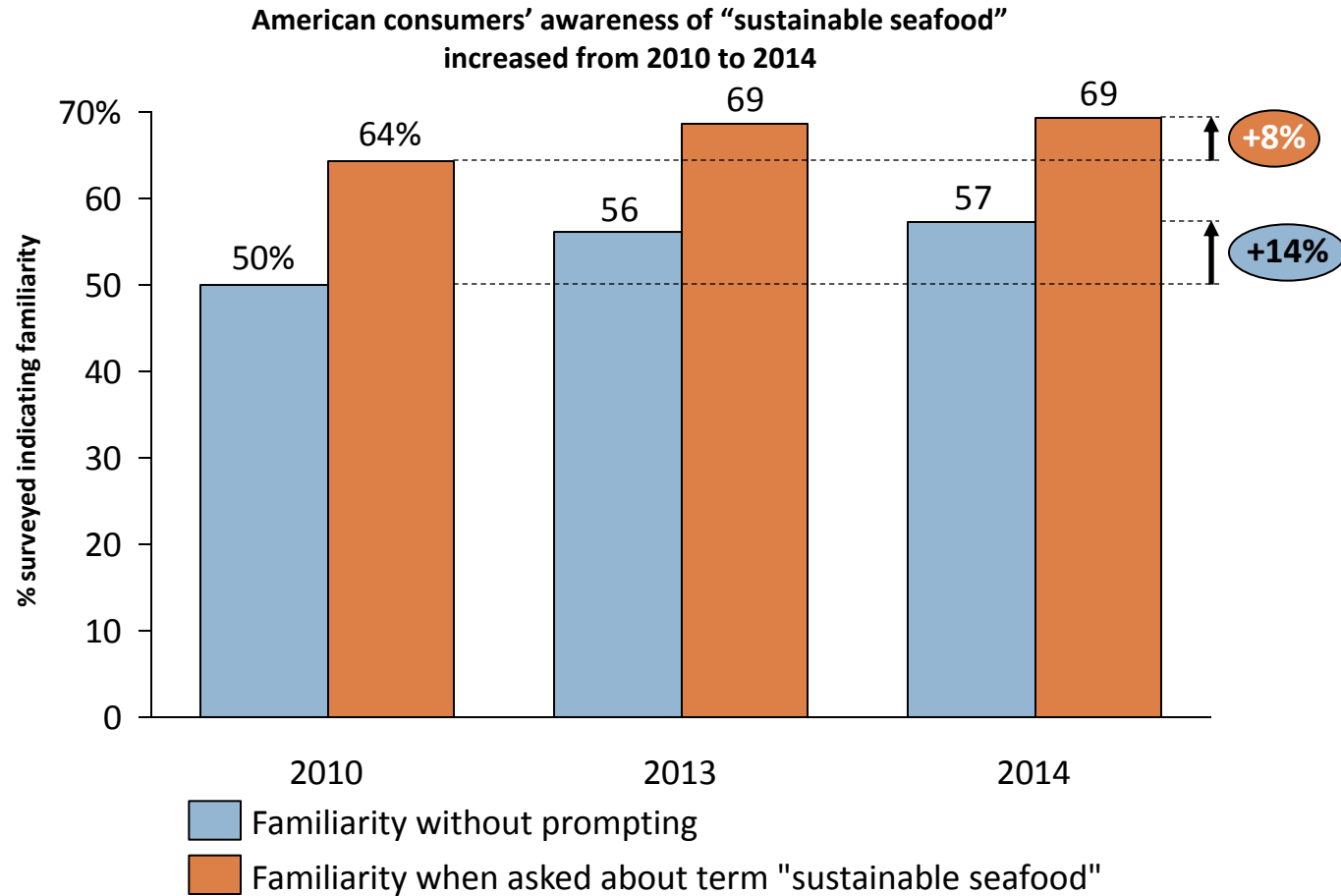
Google Trends, which measures the relative (not absolute) volume of search traffic, suggests that search interest in sustainable seafood issues is stable.

Google Trends for searches related to key words related to sustainable seafood



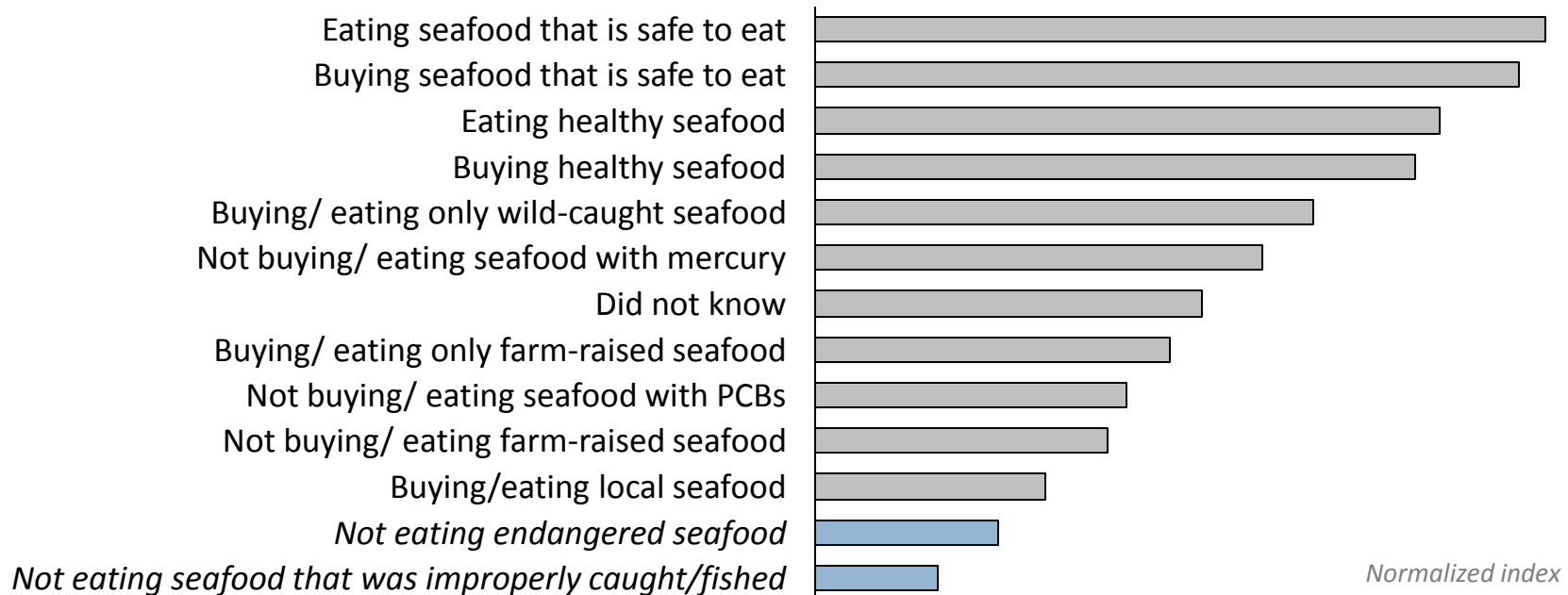
One difficulty with measuring both consumer interest in sustainable seafood and media coverage of seafood issues is adjusting for the total number of searches or articles published. As content in general proliferates, more words are published overall. Google Trends avoids this problem by measuring searches relative to overall search volume.

Consumers are increasingly aware of the concept of sustainable seafood



For consumers, “sustainable seafood” means “safe to eat”

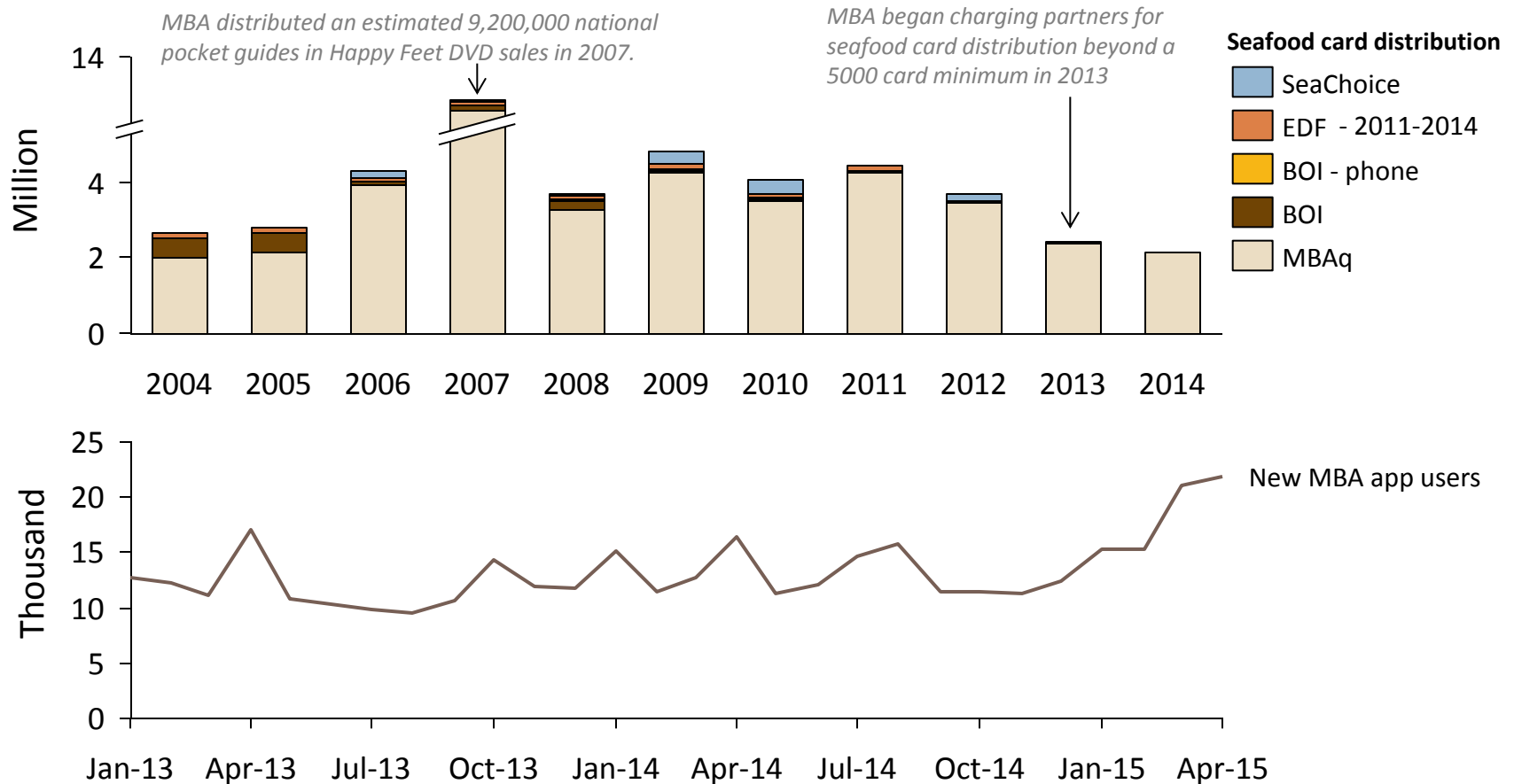
Consumers describe “sustainable seafood” as:



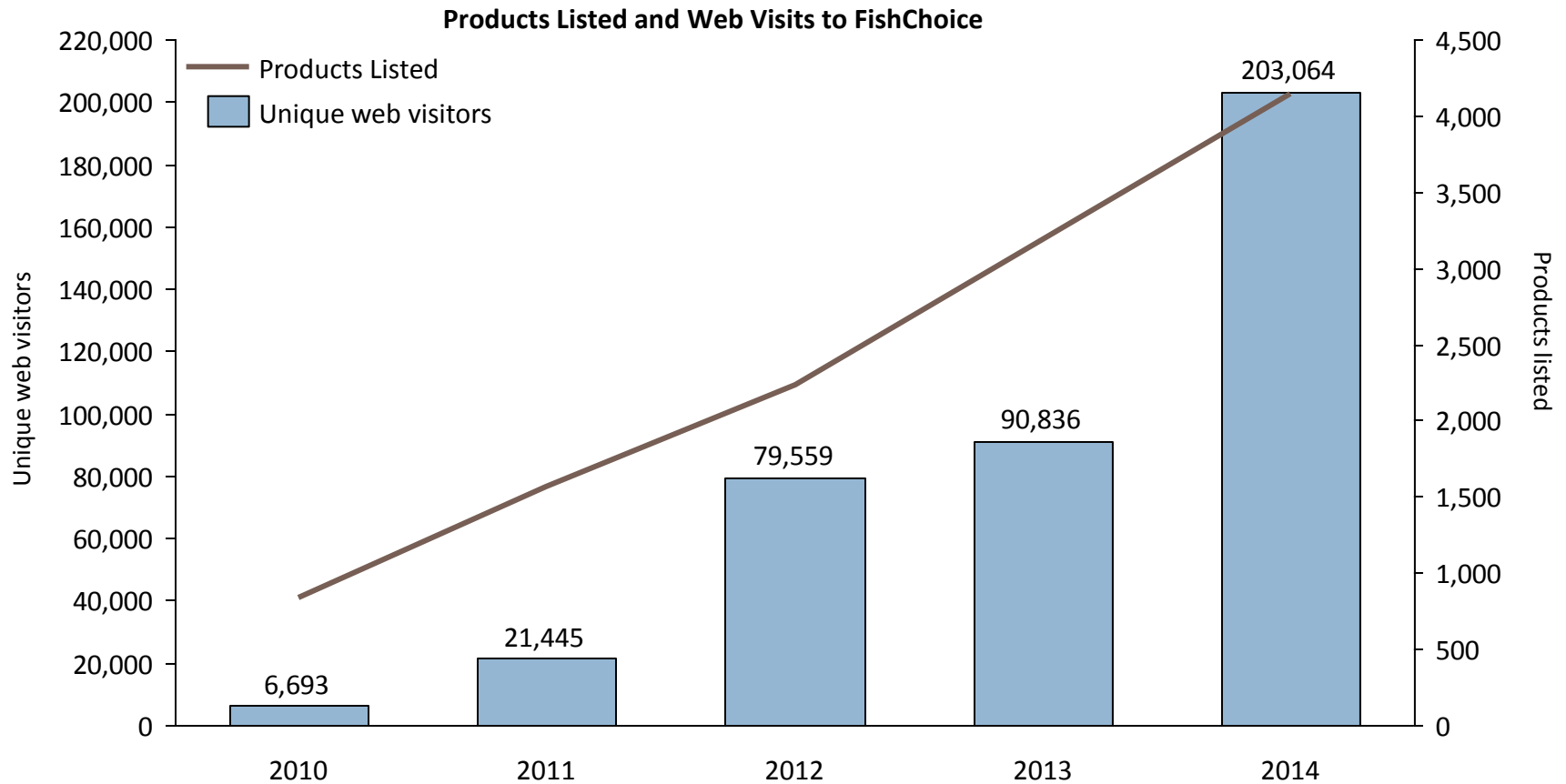
CREATING CONDITIONS FOR BUSINESS CHANGE: CONSUMERS

Seafood card distribution has waned in recent years; consumers may instead use phone applications as a resource

Number of seafood cards distributed/ new application users

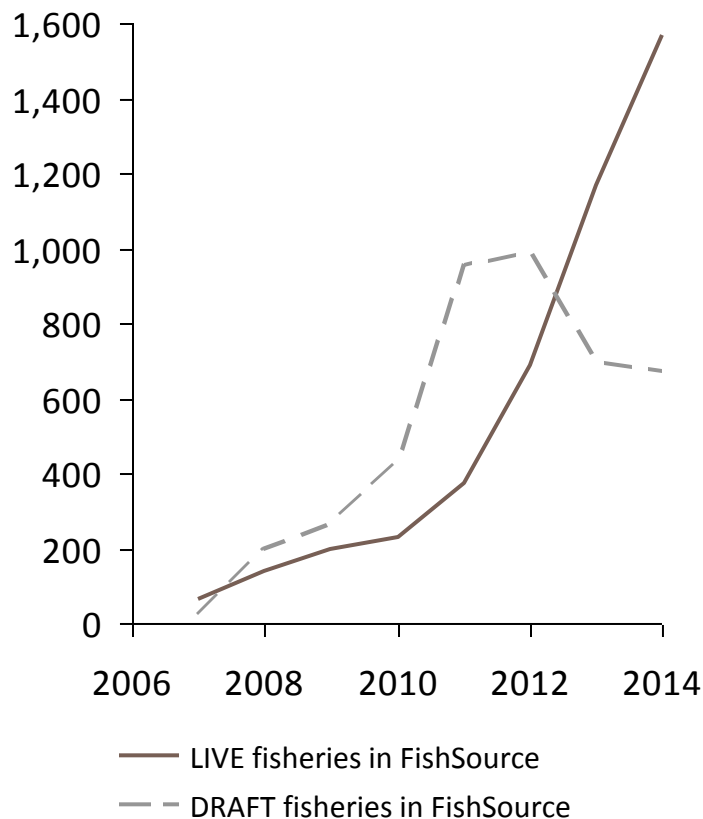


FishChoice continues to see a rapid growth in registered users and products listed



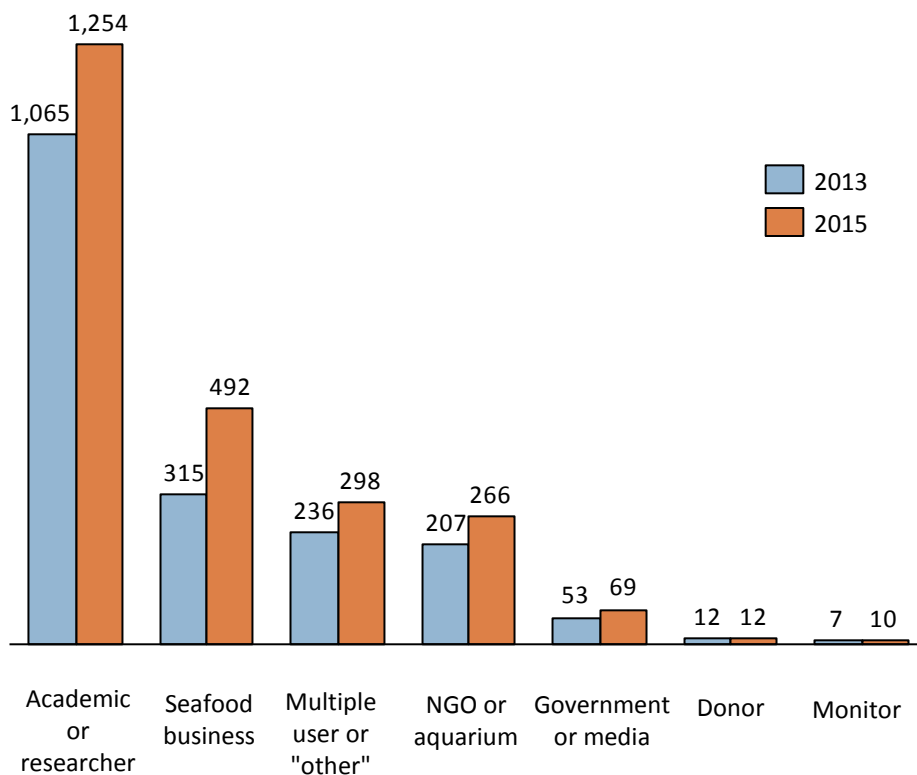
FishSource, a database monitoring the status and environmental performance of fisheries, continues to grow its user-base and fishery coverage

Fisheries in FishSource as of January 2015



Registered FishSource users*

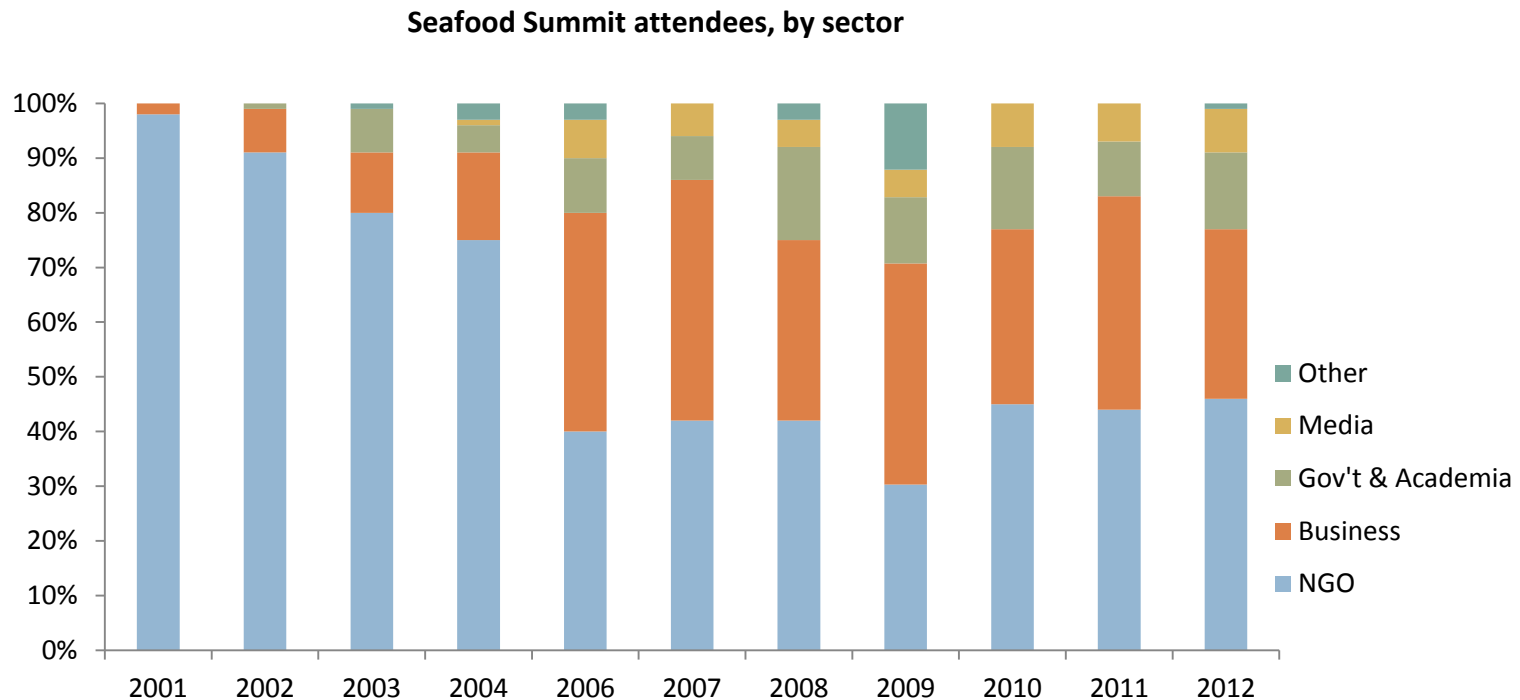
(total n= 2401, up from 1194 in 2008)



*Registered users may or may not have accessed the site recently.

Source: Personal communications with Pedro Sousa, SFP

Seafood Summit attendance and composition have stabilized and matured



Policy change

METRICS INCLUDED

Global status and trends in fishery health and exploitation

Certification data

Fishery Improvement Projects

Seafood trade flow data

Key commodity trade flow trends

Corporate- NGO partnerships

Greenpeace's scorecard data

U.S. seafood consumption

Media and literature penetration

Seafood card distribution

Consumer survey data

Industry event attendance

GOAL: IMPACT ON THE WATER

PRODUCER-LEVEL SUPPORT

Individual producers have the capacity, and support from the NGO and corporate communities, to improve

INTERNATIONAL TRADE DYNAMICS

Demand generated by sustainable seafood commitments is transmitted through international trade and the ability to engage fisheries is a function of the market's global reach

BUSINESS RELATIONSHIPS & SUPPLY CHAIN ENGAGEMENT

Influential businesses operationalize their commitments to sustainable seafood

CONDITIONS FOR BUSINESS CHANGE

Influential businesses have the information, tools, and motivation to engage on sustainable seafood, based partly on consumer awareness and NGO partnership.

POLICY CHANGE

A combination of advocacy and corporate support help drive improved government regulations and enforcement

Policy timeline

E.U. policy update

U.S. policy update

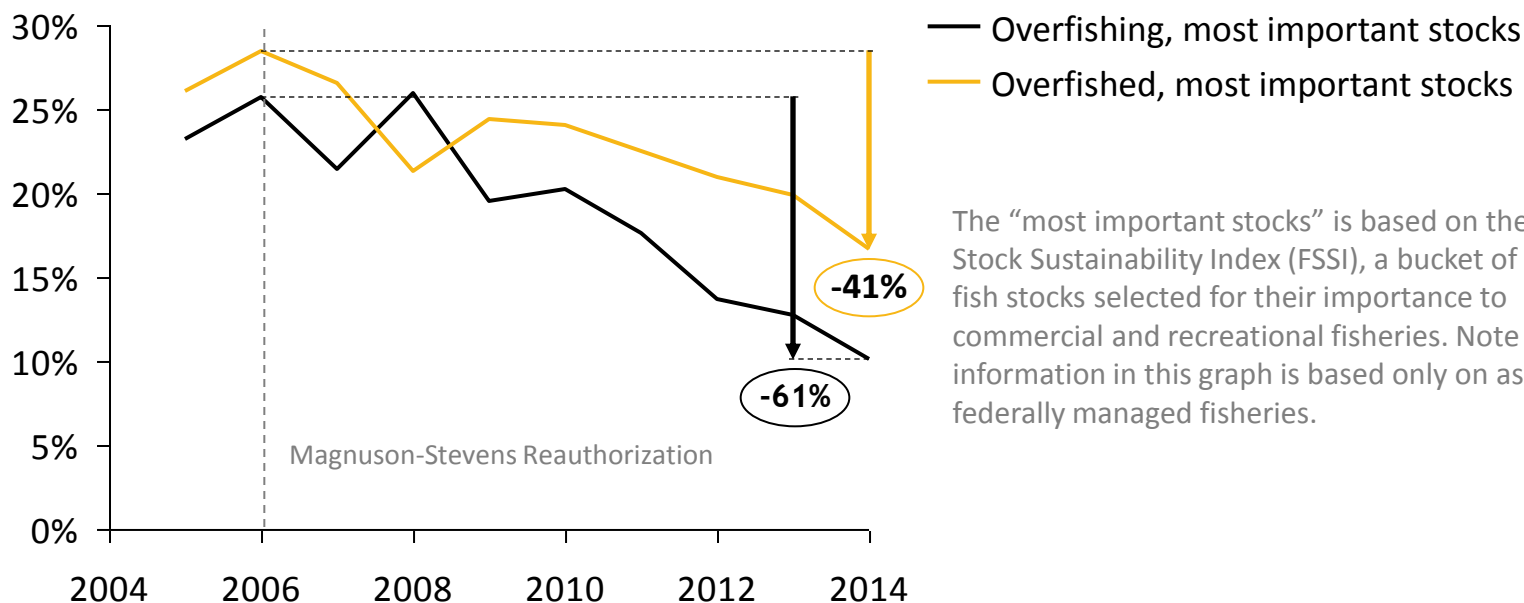
Port State Measures

Timeline of major marine policy legislation and actions

Year	United States	Rest of World
2006	U.S. Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006	
2007	Catch share program implemented for Gulf of Mexico Red Snapper Bering Sea closed to bottom trawl fishing	Mexico: Progressive fishery law passed; allows for the establishment of government-administered fishery refugia Indonesia: Law passed allowing local governments to establish, manage, fund marine protected areas (MPAs)
2008	IFQ system approved for West Coast groundfish trawl fleet	
2009	200,000 square miles of U.S. Arctic waters protected from industrial fishing	Indonesia: Amends national fisheries act; announces goals to expand MPAs from 6 mha to 20 mha by 2020
2010	Obama signs Executive Order establishing a National Ocean Policy	Europe: E.U. IUU legislation enters into force requiring all seafood imports be accompanied by a catch certificate with information about the species, catch location, fishing vessel, date of capture, and any trans-shipments that have taken place
2011	Catch share implemented for the Pacific groundfish trawl fishery	
2012	NOAA meets the requirement specified in the 2007 Magnuson-Stevens Act to implement catch limits for all federally managed fisheries	Australia: Puts ~1/3 of coastal waters into world's largest network of marine preserves Chile: New fisheries law requires ITQs and other key fishery management actions
2013		Europe: European Parliament voted for reform of the Common Fisheries Policy that includes requirements to manage MSY and discard bans International: CITES approved international trade restrictions for five species of threatened and endangered sharks
2014	Obama expands the Pacific Remote Islands National Marine Monument, creating the world's largest protected marine reserve A U.S. Presidential Task Force is established to recommend a comprehensive framework of programs to combat IUU fishing	Europe: The E.U. begins issuing trade sanctions (yellow and red cards) to countries not taking meaningful action to deter IUU. Red and yellow carded countries begin to take real action to improve their laws and monitoring and enforcement South Korea: Updates deep water fishing laws and improves enforcement
2015	U.S. Presidential Task Force on IUU released recommendations in December 2014, followed by an action plan in March 2015	Mexico: Fishery and MPA enforcement strengthened, turned over to Navy

The U.S. continues to make progress in reducing overfishing in federal waters

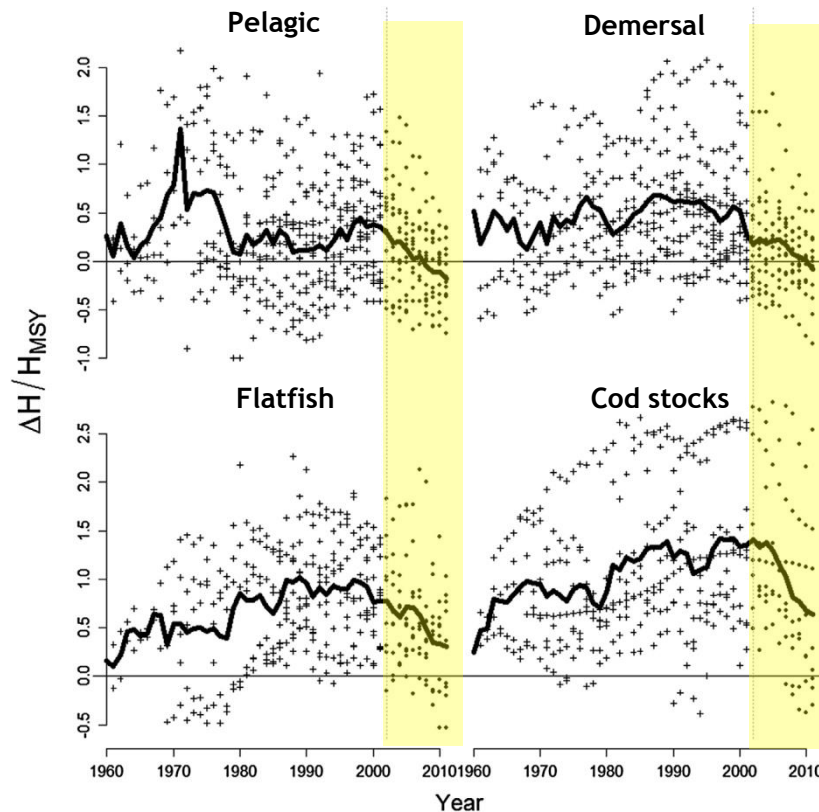
Percentage of fisheries that are overfished or subject to overfishing in the U.S., of stocks where the status is known



* 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).

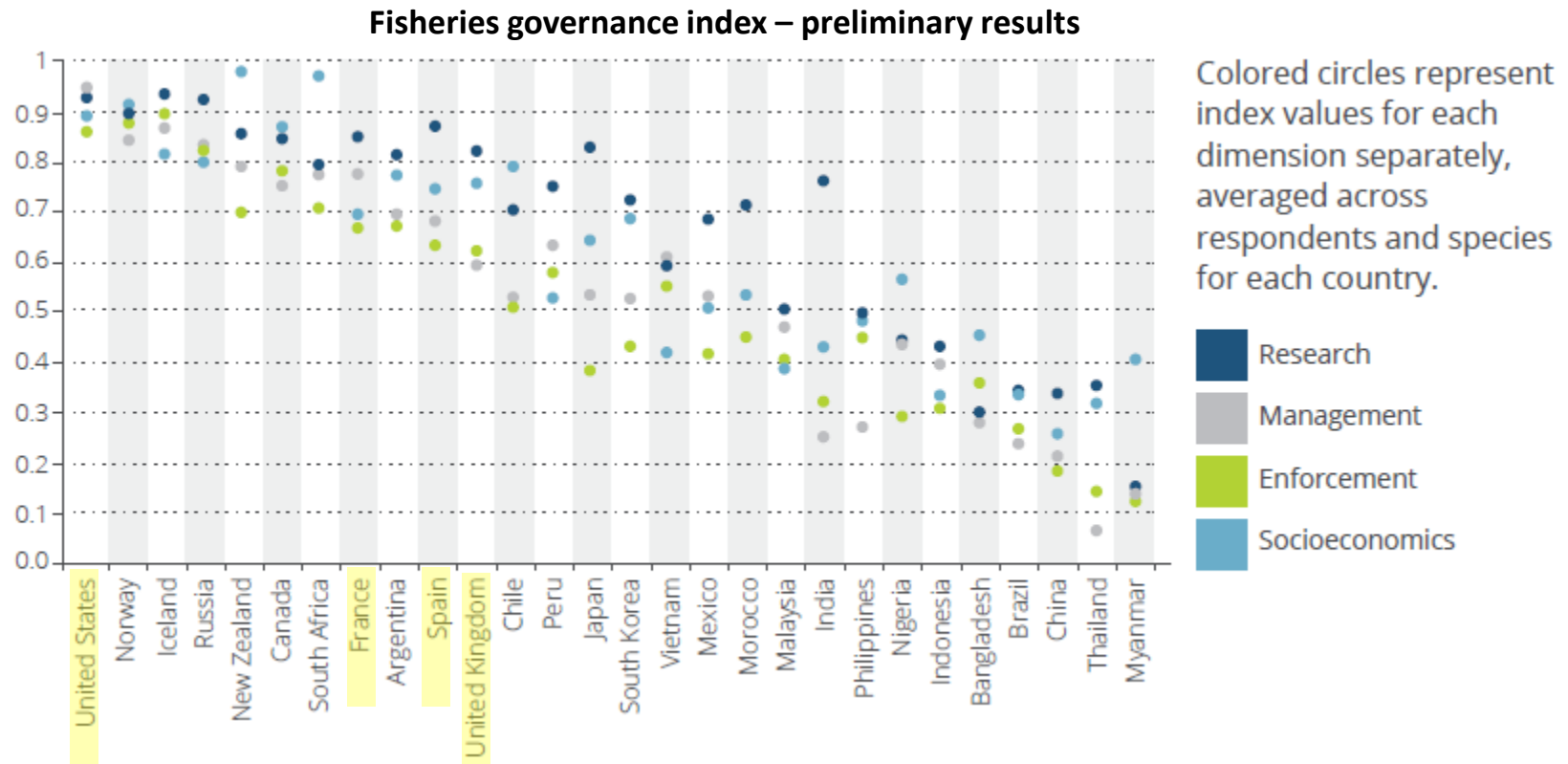
European stocks are also faring better since the reforms in 2002

Rates of overfishing in Northeast Atlantic (European) fish stocks



H is the exploitation rate, or intensity of fishing. An H/H_{MSY} of less than 1 is indicative of a sustainably fished stock. Since the reform of European fisheries policy in 2002 (indicated by a dotted line), overfishing has decreased. In some cases, the improvement may have begun even before the policy reform.

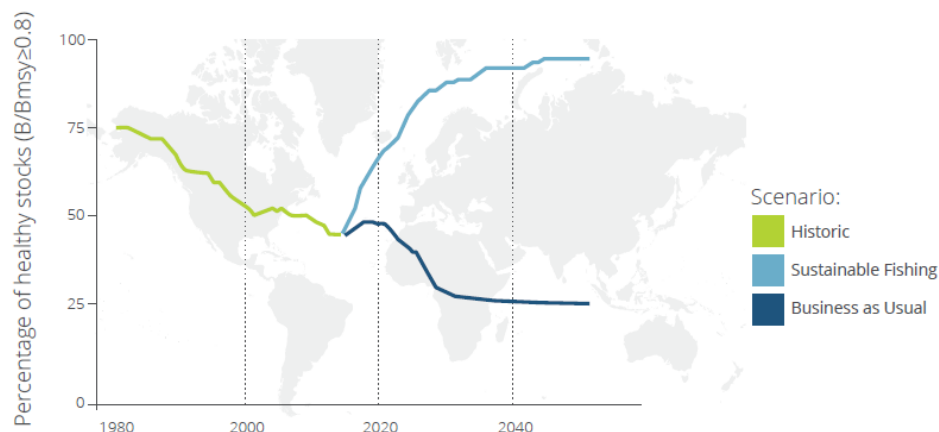
The U.S. and European fisheries have among the best fisheries management



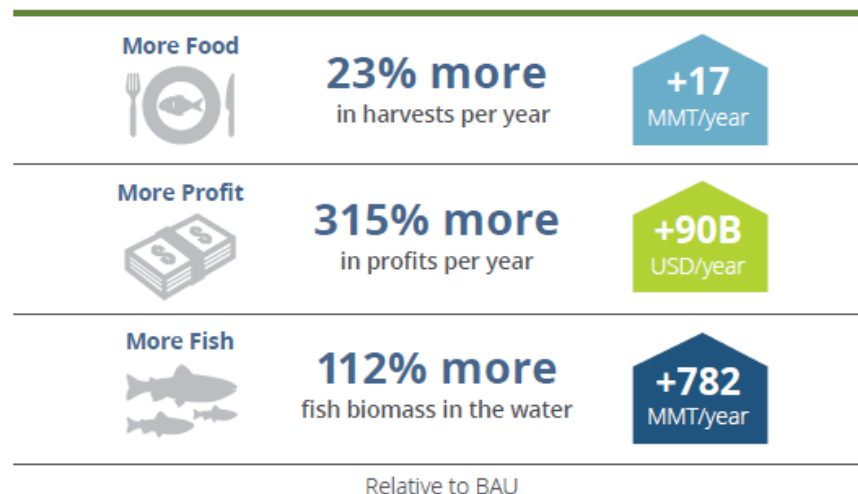
PROGRESS ON POLICY CHANGE

More than nearly any other resource, fisheries possess tremendous potential for improvements that generate both economic and environmental gain

Global stock health under sustainable fishing vs. BAU scenarios – preliminary results



The Ocean's Tremendous Potential



This analysis, based on stocks representing 77% of global catch, suggests that in 10 years global fish production could increase by 14% even as the amount of fish left in the water for conservation grows by 36%. Over the long term, profits could increase more than 3-fold (90 billion USD). This is true across every fishing nation, but is even more true for some.

Improving fisheries management globally

- The European Commission's IUU card system has reportedly led to some significant changes in how supplying countries approach fisheries management.
- The U.S. is in the process of developing its own trade-related IUU regulations, which have the potential to bolster this trend.
- The Port State Measures Agreement requires ratification by an additional 14 nations before it comes into effect.

- There are signs the sustainable seafood movement is reaching maturity, as growth in corporate commitments, certification,* and fisheries improvement projects* (FIPs) appears to have plateaued.
- The state of fisheries may now be improving in certain geographies, namely North American and Europe. However, it is difficult to draw direct, causal links between the conservation markets movement and widespread fisheries recovery.
- Major policy changes in Europe and the United States, coupled with public concerns about mislabeling and labor practices, are also helping to transform fishing practices across the globe.

* MSC and FIP volumes appear to have plateaued, although the number of fisheries and units of certification continue to grow each year.

Comments and questions?

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