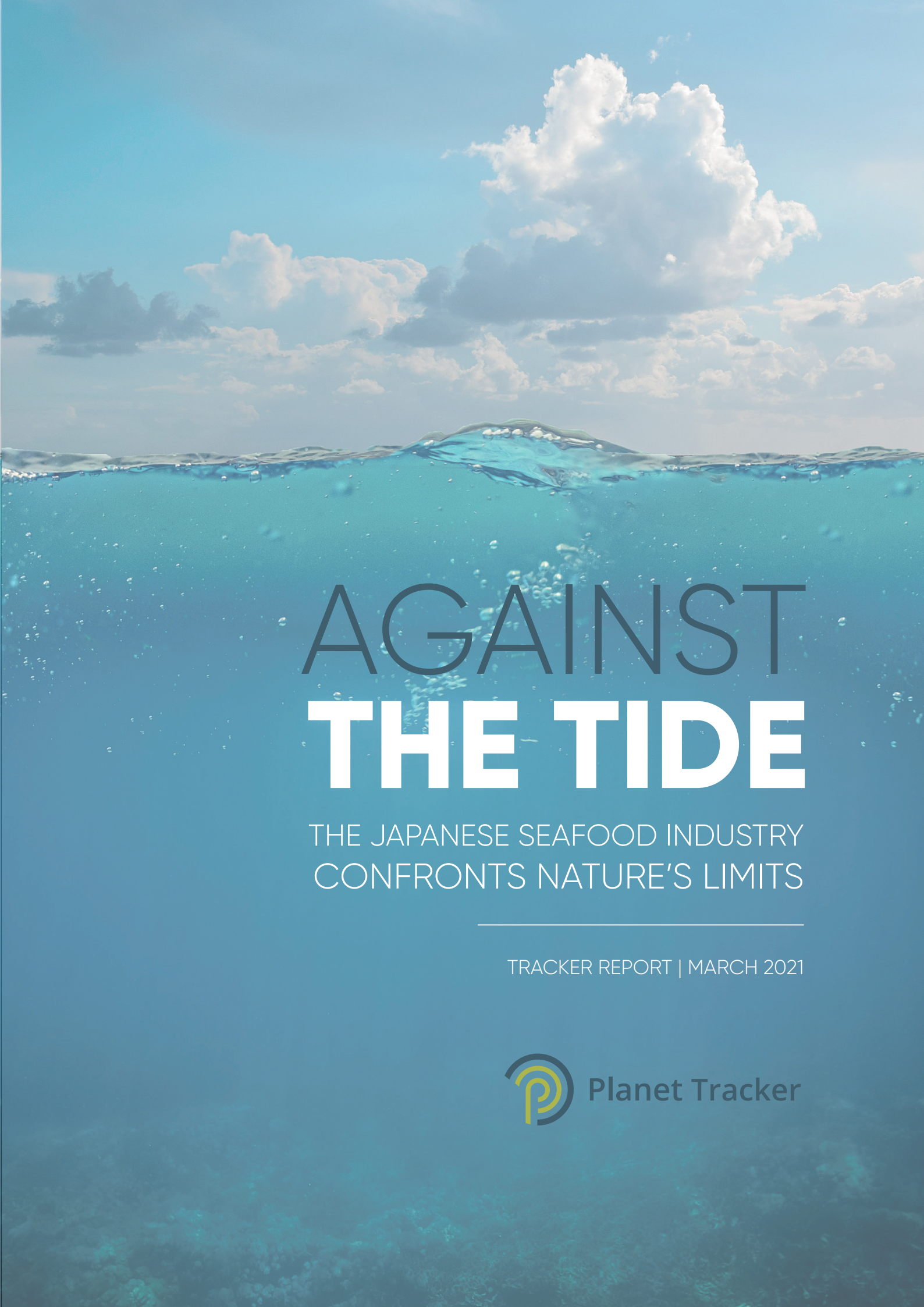

AGAINST THE TIDE

THE JAPANESE SEAFOOD INDUSTRY CONFRONTS NATURE'S LIMITS

TRACKER REPORT | MARCH 2021

Planet Tracker

ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank aligning capital markets with planetary limits. It was created to investigate the risk of market failure related to environmental limits. This investigation is primarily for the investor community where environmental limits, other than climate change, are often not aligned with investor capital.

Planet Tracker generates breakthrough analytics to redefine how financial and environmental data interact with the aim of changing the practices of financial decision makers to help avoid both environmental and financial failure.

SEAFOOD TRACKER

Seafood Tracker investigates the impact that financial institutions can have on sustainable corporate practices through their funding of publicly listed wild-catch and aquaculture companies. Our aim is to align capital markets with the sustainable management of ocean and coastal marine resources.

This report demonstrates how improved sustainability at Japanese seafood companies could drive improved operational and financial performance in a way aligned with both investors' interests and natural capital constraints.

Seafood Tracker is a part of the wider Planet Tracker Group of Initiatives.

ACKNOWLEDGEMENTS

Authors: François Mosnier, John Willis

Planet Tracker would like to acknowledge the input of those who reviewed draft papers, including Martin Exel, Hiro Hayasaki, Kozo Ishii, Hideki Obata and Wakao Hanaoka and the Seafood Legacy team.

WITH THANKS TO OUR FUNDERS

This report is funded in part by the Gordon and Betty Moore Foundation through the Finance Hub, which was created to advance sustainable finance.

Suggested citation: Mosnier F, Willis J (2021):
Against the Tide, The Japanese Seafood Industry Confronts Natural Capital's Limits

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WHY YOU SHOULD READ THIS REPORT

Is the state of nature (or natural capital) really relevant to companies' financials?

In this report, using an entire industry of a G7 country as a case study, Planet Tracker shows how the depletion of the natural world negatively impacts financials, and how improved sustainability could drive better financial performance. **Analysts and portfolio managers must therefore understand and account for natural capital and its interplay with financial performance.**

In this report we examine the Japanese seafood industry, from fishing companies and feed producers to retailers and restaurants, to determine whether exposure to a declining resource has impacted the finances of these companies. By analysing the long-term financial performance of 70 listed Japanese companies in this industry, Planet Tracker will show:

- Why declining seafood consumption, wild-catch, aquaculture output and seafood imports have been largely overlooked by investors in these Japanese companies
- What measures management teams have taken to counter dwindling seafood resources
- Which financial indicators are most relevant to equity investors in these companies
- How improved sustainability could drive an improvement in these financial indicators in a way which is aligned with the natural capital constraints these corporates face

Why the focus on Japanese seafood companies?

More than 55% of the world's oceans are subject to industrial-scale wild-catch harvest, spanning an area four times that covered by terrestrial agriculture.[1] Planet Tracker's research under the Seafood Tracker initiative focuses on investigating the financial and environmental stability of the seafood supply chain, from wild-catch and aquaculture through to retailers and restaurants. It is a long, globalised and often opaque supply chain, involving thousands of companies globally.

Yet within the 100 largest seafood companies globally, no other country is more represented than Japan. These large companies source globally, meaning their impact on the status of the world's oceans is significant.[2] Japanese seafood company Nissui, for example, accounted for 1.6% of the reported global wild-catch harvest in 2016.[3]

In 2019, Planet Tracker revealed that the Japanese seafood industry was facing a 'Perfect Storm' of declining seafood consumption and production in a context of overfishing and depleting fish stocks and argued that rebuilding sustainable stocks of wild-catch fish could transform the industry, increase profits, preserve its reputation and reduce financial risk to investors.

This report revisits Japan and undertakes a thorough financial analysis of the seafood industry to determine whether these companies have been influenced by natural capital factors. We also provide practical recommendations to simultaneously improve the sustainability of the industry and its financial performance.

KEY TAKEAWAYS

- As overfishing and multiple other anthropogenic pressures caused a drop in fish stocks, seafood supply and demand fell in Japan. Yet between 2010 and 2019, rising profits and share prices of 70 companies listed on the Tokyo Stock Exchange and exposed to seafood defied the challenges of falling production, consumption, imports and farming of seafood. How could this be?

- Companies' management used foreign expansion, acquisitions, vertical integration, cost-cutting and de-leveraging to bypass these natural capital constraints. However, the last three strategies are reaching their limits.

- Meanwhile, the share of overfished stocks is at an all-time high and deeper analysis shows that the financials of the companies most exposed to seafood (seafood retailers, wholesalers and producers, along with restaurants) are suffering from natural capital degradation. Investors have recognised this: the valuations of these companies have decreased relative to their peers.

- Currently investors in seafood companies primarily care about the growth in five financial indicators: revenue, EBIT margin, operating cash flow, return on capital employed and valuation multiples. Whilst none of these properly reflect natural capital issues (but seafood volume-based metrics would), Planet Tracker proposes a list of recommendations through which companies exposed to seafood could align these five drivers with increased sustainability:

    - Disclose seafood volumes handled by species and origin
    - Commit to reducing overfishing
    - Develop closed-cycle aquaculture operations, sustainable feeds, plant-based seafood and lab-grown seafood, traceability solutions, and certified products
    - Reduce bycatch, the environmental costs of aquaculture, and food waste
    - Gradually retire and write-off bottom trawling fleets, freeze their footprint and not trawl marine protected areas
    - Remove ghost fishing gear
    - Implement independently verified sustainability policies in both English and Japanese, that inform corporate and M&A strategies
    - Consider participating in a blue bond scheme that would allow for a recovery in fish stocks based on a temporary catch reduction while increasing their returns

EXECUTIVE SUMMARY

Profits and share prices in the Japanese seafood sector have grown despite natural capital constraints

Between 2010 and 2019, the consumption, wild-catch, aquaculture output and imports of seafood in Japan have all trended one way: down. A combination of changing consumer trends and anthropogenic pressures on marine resources led by overfishing and climate change have driven that decline, further compounded by industry practices harmful to the environment such as bottom trawling, ghost fishing,[I] bycatch[II] or nutrient pollution in fish farms.

Yet, whilst the state of marine resources on which the Japanese seafood industry depends inexorably deteriorates, the revenue, profits and capitalisation of 70 publicly-listed Japanese companies exposed to seafood have trended one way in the same period: up. How is that possible?

Aggregating the financials of an entire sector in a G7 economy to draw natural capital-related conclusions

Planet Tracker analysed more than 800 financial datapoints for each of the 70 companies outlined in Table 1, covering everything from inventories level to cash spent on acquisitions - see Appendix A for the methodologies used and Appendix B for financial details on these companies. We are not aware of any similar analysis having previously been conducted.

We have classified companies in the Planet Tracker Universe of 70 companies into sub-sectors: from feed producers, food producers and seafood producers at the beginning of the seafood value chain, down to food and seafood wholesalers and retailers, as well as restaurants.

Within these categories, seafood producers and seafood retailers/wholesalers are those with the highest exposure to seafood, whilst food producers, feed producers and food retailers all generate more sales from other products (see definition on page 22 and in Appendix A). The same is true for conglomerates, which are present at all stages of the seafood value chain, but for which seafood represents a minimal portion of sales.

I Derelict fishing gear that continues to catch fish

II The portion of a commercial fishing catch that consists of marine animals caught unintentionally

Table 1: *List of Companies Exposed to Seafood that Planet Tracker Analysed.*[4]

Food Producers	Seafood Producers	Feed Producers	Seafood Retailers/ Wholesalers	Food Retailers/ Wholesalers	Restaurants	Conglomerates / Other
AHJIKAN CO., LTD.	DAIREI CO.LTD.	FEED ONE CO. LTD.	Chubu Suisan Co., Ltd.	ALBIS Co., Ltd.	Daisyo Corporation	Akasaka Diesels Ltd.
Aohata Corporation	Global Food Creators Co., Ltd.	Higashimaru Co., Ltd.	Chuo Gyorui Co., Ltd.	Daikokutenbussan Co., Ltd.	General Oyster, Inc.	Furuno Electric Co., Ltd.
Hagoromo Foods Corporation	Ichimasa Kamaboko Co., Ltd.	Nichiwa Sangyo Co., Ltd.	Daisui Co., Ltd.	Halows Co., Ltd.	GOURMET KINEYA CO., LTD.	Hanwa Co., Ltd.
Hayashikane Sangyo Co., Ltd.	Kyokuyo Co., Ltd.	Showa Sangyo Co., Ltd.	Daito Gyorui Co., Ltd.1	JM Holdings Co., Ltd.	Kaihan Co., Ltd.	Itochu Corporation
Imuraya Group Co., Ltd.	Maruha Nichiro Corp.		Hohsui Corporation	Maxvalu Kyushu Co., Ltd.	Kanmonkai Co., Ltd.	Marubeni Corporation
Kakiyasu Honten Co., Ltd.	Maruichi Co., Ltd.		Tohto Suisan Co., Ltd.	Maxvalu Tokai Co., Ltd.	Tokyo Ichiban Foods Co., Ltd.	Mitsubishi Corporation
Natori Co., Ltd.	NICHIMO CO., LTD.		Tsukiji Uoichiba Company, Limited	Nishimoto Co., Ltd.	Umenohana Co., Ltd.	Nitta Gelatin Inc.
Nichirei Corporation	Nippon Suisan Kaisha, Ltd.		Uoriki Co., Ltd.	Plant Co., Ltd.	Uoki Co., Ltd.	Nitto Seimo Co., Ltd.
NIHON SEIMA CO., LTD.	OUG Holdings Inc.		Yokohama Maruuo Co., Ltd.	S. ISHIMITSU&CO LTD		Shimano Inc.
Toyo Suisan Kaisha, Ltd.	Yokohama Gyorui Co., Ltd.		Yokohama Reito Co., Ltd.	Satoh & Co., Ltd.		Shinyei Kaisha
Wakou Shokuhin Co., Ltd.	Yonkyu Co., Ltd.			Super Value Co., Ltd.		Sojitz Corp.
Yamae Hisano Co., Ltd.						Tiemco Ltd.
Yoshimura Food Holdings KK						
Yutaka Foods Corporation						

III Maruha Nichiro closed the acquisition of Daito Gyorui in May 2020. We keep Daito Gyorui in our list when analysing 2010-2019 performance.

We then researched how companies bypassed natural constraints and how instead they could grow in a way that values nature.

Foreign expansion, acquisitions, vertical integration, cost-cutting and de-leveraging have allowed companies to bypass natural constraints

The proportion of assets held abroad by the 70 listed Japanese companies in the Planet Tracker Universe almost doubled between 2010 and 2019, to reach 10% on average. As a result, foreign revenue grew eight times faster than domestic revenue over the 2010 to 2019 period, partially helped by favourable currency fluctuations. Overall, these companies grew revenue by an average of 2.1% per annum (p.a.) despite the decline in seafood resources. Mergers and acquisitions (M&A) contributed an estimated 11% of that growth.

EBIT[IV] margins slightly declined - by 30 basis points (bps) - as companies stepped up their investments (away from wild-catch and often away from seafood), with capital expenditures rising by 60% as a proportion of sales. Profitability was, however, supported by a combination of vertical integration and cost-cutting rather than improvements in sustainable practices: on average, non-production costs (excluding depreciation and amortisation) accounted for 6% of sales in our Universe in 2019, down from 10% in 2010.

As interest rates paid by companies halved and companies deleveraged (net debt/EBITDA ratios were brought down to almost zero), net incomes rose. So did share prices, by 75% on average, in line with the TOPIX 100 index.[V]

In brief, investors have implicitly rewarded Japanese seafood companies for using management strategies to offset the impact on their business of depleting natural capital assets, rather than for ensuring those assets stop being degraded.

Can the Japanese seafood sector afford to keep ignoring natural capital constraints?

Further financial approaches to growth (foreign expansion and additional acquisitions) are still possible. However, debt levels cannot be substantially lowered any more to decrease interest costs, and there are limits to both vertical integration and cost-cutting. Perhaps more importantly, our deep dive into the financials of the 70 listed companies exposed to seafood reveals that, behind the veneer, nature has been affecting the financials, despite managements' best efforts to offset this.

IV Earnings Before Interest and Taxes, see Glossary
V The 100 most liquid large companies in Japan by market capitalisation

Companies highly exposed to seafood have started to suffer from natural capital constraints

The trends exhibited by the companies most exposed to seafood are worrying – see Figure 1:

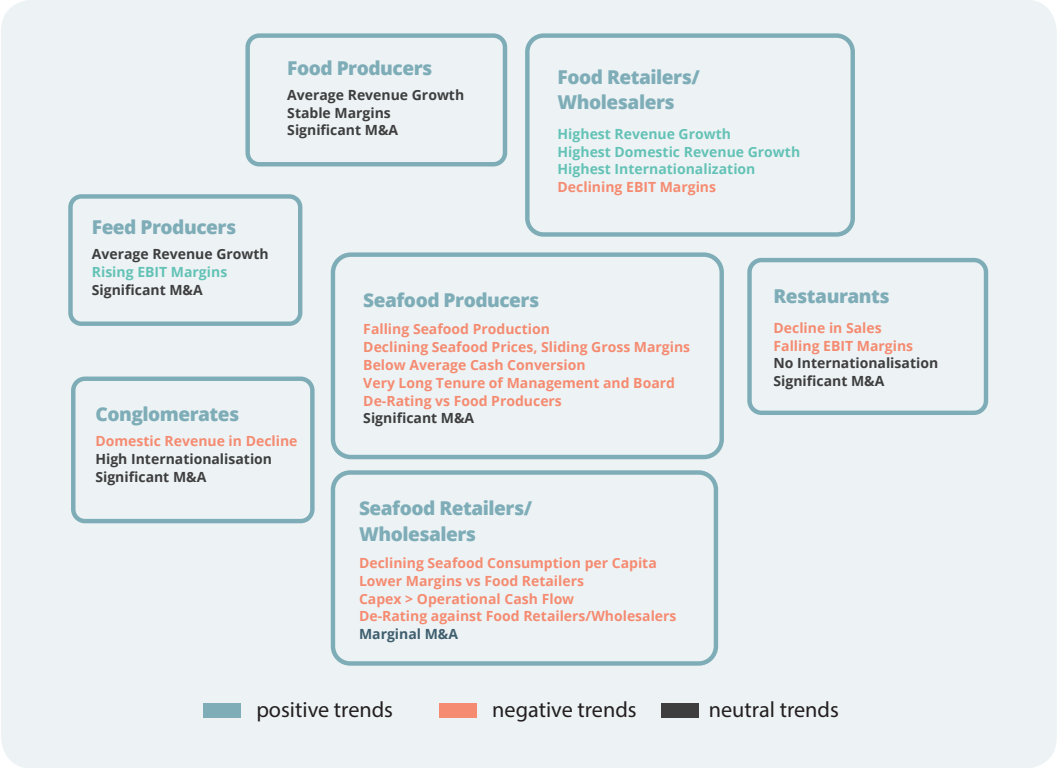


Figure 1: *Selected Trends Across the Japanese Seafood Value Chain.*[5]

- Domestic sales at seafood retailers and wholesalers have trended down, after overfishing led to a decrease in seafood volumes, further amplified by a change in diet away from seafood. In contrast, the more diversified food retailers enjoyed solid revenue growth.
- Restaurants highly exposed to seafood have seen a decline in both sales and margins.
- Seafood producers generate average gross margins 12 percentage points lower than the more general food producers, who are less exposed to seafood. The same margin gap is noticeable for seafood retailers/wholesalers, compared to food retailers/wholesalers, and is slightly widening. [VI]
- Gross margins for seafood producers are on a downward trend, likely because average producer prices of seafood are declining in Japan.
- Cash flow conversion at seafood producers is by far the lowest within the sector, often due to changes in the value of biological assets (i.e. change in the price of fish grown in farms).
- Seafood retailers and wholesalers are heavily investing away from seafood due to the decline in seafood volumes but are no longer able to cover the costs of their investments through their operational cash flow alone.
- Companies with the highest exposure to seafood have the highest exposure to very long-term debt: 91% of the seafood producers' debt is due in 2030 and beyond, whilst visibility on fish production and therefore profit generation in the next decades is very limited.
- The average time in office for management and boards of seafood producers is 29 years, three times longer than restaurants for instance and four years more than at food producers. This might create stability but also inhibit fresh management thinking.

VI Food producers/retailers refer to companies for which the majority of the production/trade consists in other items than seafood products.

Have investors turned away from Japanese seafood companies?

Against this backdrop, it is perhaps not surprising to note that the EV/EBIT[VII] multiple of seafood producers has come down from 18x to 14x – i.e. by four notches – while the multiple of food producers (less exposed to seafood) has expanded by the same magnitude. Similarly, the P/E[VIII] multiple of seafood retailers declined between 2010 and 2019, whilst that of food retailers expanded. This could suggest that exposure to seafood is less desired by investors – see Figure 2.

Figure 2: *Evolution of the Valuation of Seafood vs Food Producers and Retailers/Wholesalers.*[6]

Reconciling investors with seafood companies using sustainability as the key equity story

From its Universe of 70 companies, Planet Tracker analysed the share price performance of the ten best and ten worst performing Japanese companies exposed to seafood and compared it to their financials. We conclude that the five key drivers of share price performance in the Japanese seafood industry were growth in revenue, growth in EBIT margin, growth in operating cash flow, growth in return on capital employed and expansion in valuation multiples.

Mindful of the fact that these five indicators fail to account for how well natural capital is managed (seafood volumes would be a better indicator for that purpose), we nonetheless analysed how these five drivers of financial performance could grow further in a way that is aligned with natural capital constraints.

VII Enterprise Value to EBIT, a measure of the valuation of a company – see Glossary
VIII Price to Earnings ratio, a common measure of the valuation of a company – see Glossary

CALL FOR ACTION:
WHAT COMPANIES CAN DO

Planet Tracker recommends **Japanese companies exposed to seafood** implement the following strategies to grow in a way that values nature and improves share price drivers:

- **Growth in revenue:** the development of closed-cycle aquaculture operations, sustainable feeds, plant-based seafood and lab-grown seafood and credible certified products are the most sustainable strategies to grow revenue for companies in the Planet Tracker Universe, along with a reduction in bycatch and ghost fishing.
- **Growth in EBIT margins:** can be achieved in the short term through the implementation of traceability systems (since it reduces food recall, waste and liability costs) and in the longer term through the disclosure and reduction of the environmental costs of aquaculture.
- **Growth in operational cash flow:** a sustainable way to improve cash conversion is for each company alongside the supply chain to ensure they reduce food waste, a widespread issue potentially evidenced by the rising inventories to sales ratios in each subsector.
- **Growth in returns on capital employed:** an effective way to reduce overfishing and improve returns at the same time would be for fishing companies to participate in a blue bond scheme where wild-catch volumes are temporarily and significantly reduced, and investors finance the temporary loss in free cash flow, thus allowing for a recovery in fish stocks and higher catch level in the medium-term. In our modelling, the returns of such a scheme would be high for fishing companies, even though many challenges would need to be overcome.[7]

  Another solution that would make the sector more asset-light and sustainable would be for owners of fishing fleets to gradually retire and write-off their bottom trawlers - one of the least sustainable type of fishing vessels because of their impact on the seabed - freeze their footprint (i.e. refrain from trawling new areas) and commit to not trawling marine protected areas.
- **Growth in valuation multiples:** research shows that the market rewards firms with high corporate sustainability performance.[IX, 8, 9] With this in mind, disclosure of seafood volumes handled by species and origin, detailed plans on how to end overfishing, and implementation of independently verified sustainability policies (in both English and Japanese, to broaden the investor base) that inform corporate strategies would allow investors to know, understand and analyse the many natural capital risks that weigh on these companies, and how they plan to mitigate them. Among seafood producers Nissui, for instance, already partially discloses the volumes sourced and tends to acquire companies aligned with its sustainability strategy, but better disclosure is required across the board.

WHAT FINANCIAL MARKET PARTICIPANTS CAN DO

Analysts, investors, lenders, bankers and insurers of these companies can assist by:

- Understanding how defying nature can result in lower revenue growth, margins, cash flows and ultimately valuations and ability to repay debt for these companies
- Engaging with these companies on the ways to align revenue, profit and cash flow growth strategies with natural capital constraints, including by discussing the merits of the recommendations provided by Planet Tracker (see above) with each company. To guide investors in their thinking, we provide in the table below our summarised view on how the implementation of our recommendations could improve companies' financials and valuations – see detailed explanations from page 93.

IX A survey by McKinsey & Co indicates that C-suite leaders would be willing to pay about a 10 percent median premium to acquire a company with a positive record for ESG issues over one with a negative record. That's true even of executives who say ESG programs have no effect on shareholder value.

Table 2: *Main Goal and Estimated Impact of Each of Our Recommendations, Sorted by Financial Goal*

Recommendation	Main goal		Impact on				
	Financial	Environmental	Revenue growth	EBIT margin	Operational cash-flow	Returns	Multiples
Closed-cycle aquaculture	Revenue growth ↑	Overfishing ↓	↑	Likely ↑	Likely ↓	↓ in the short term ↑ later	Likely ↑
Manufacture of sustainable feeds	Revenue growth ↑	Deforestation ↓ Overfishing ↓	↑	Likely ↑	Uncertain	Uncertain	Likely ↑
Plant-based/Lab-grown seafood	Revenue growth ↑	Overfishing ↓	↑	Uncertain	Uncertain	Uncertain	Likely ↑
Implementation of certification	Revenue growth ↑	Harmful environmental practises ↓	↑	Likely ↑	Uncertain	Uncertain	Likely ↑
Bycatch reduction	Revenue growth ↑	Pressure on marine animals ↓	↑ in the long-term	Likely ↑	Uncertain	Uncertain	Likely ↑
Removal of ghost fishing gear	Revenue growth ↑	Pressure on marine animals ↓	↑ in the long-term	Likely ↑	Likely ↑	Likely ↑	Likely ↑
Implementation of traceability	EBIT margin ↑	IUU ↓	Potentially ↑	↑	↑	↑	Likely ↑
Reduction in aquaculture environmental costs	EBIT margin ↑	Nutrient and chemical pollution ↓	Uncertain	↑	↑	Uncertain	Likely ↑
Reduction in food waste	Operational cash-flow ↑	Overfishing ↓	Potentially ↑	Likely ↑	↑	Uncertain	Likely ↑
Participation in a blue bond-based recovery of fish stocks	Returns ↑	Overfishing ↓	↓ in the short term ↑ later	Uncertain	Uncertain	↑	Likely ↑
Retirement of bottom trawlers	Returns ↑	Pressure on seabed ecosystems ↓	Likely ↓	Uncertain	Uncertain	Likely ↑	Likely ↑
Disclosure of seafood volumes handled	Valuation multiples ↑	Overfishing ↓	Uncertain	Uncertain	Uncertain	Uncertain	Likely ↑
Sustainability policies in line with corporate strategies	Valuation multiples ↑	Harmful environmental practises ↓	Uncertain	Uncertain	Uncertain	Uncertain	Likely ↑
Commitment to reducing overfishing	Valuation multiples ↑	Overfishing ↓	Uncertain	Uncertain	Uncertain	Uncertain	Likely ↑

- Understanding that whilst growth in the five key financial metrics outlined above currently drive share price performance, these metrics fail to allow an assessment of natural capital management. Volume-based metrics including species and origin would enable the assessment of both financial and natural capital-related performance.
- Discuss, design and structure financial tools that aim at reducing overfishing or improving the general sustainability of the industry. Besides the blue bond previously mentioned, another example could be a sustainability-linked bond where a fishing company currently engaged in bottom trawling would commit not to trawl marine protected areas and freeze its trawling footprint, secure debt at a low interest rate but pay penalties if it breached its commitments.

WHAT THE PUBLIC SECTOR CAN DO

Governments, policymakers, fisheries agencies and regulators in turn should:

- Understand how the status quo is likely to negatively impact tax receipts, the balance of payments, value added (hence GDP growth) and employment if natural capital continues to be depleted
- Ensure that fishing quotas are set in line with scientific advice and not higher than maximum sustainable yields and that they eventually cover all species
- Encourage companies to disclose seafood volumes sourced
- Support initiatives that reduce overfishing
- Reduce any form of support that encourages overfishing (such as subsidies)
- Assess the feasibility of a blue bond scheme that would allow for a recovery in fish stocks

FIRST IMPRESSION: GROWTH DESPITE NATURAL CONSTRAINTS

While the state of fish stocks is alarming, Japanese companies that rely on them seem to be doing just fine … at first glance.

Japanese companies exposed to seafood have indeed significantly grown their revenue, profits and share prices between 2010 and 2019. This is counter-intuitive, since both the Japanese production and consumption of seafood fell in the period, driven by a combination of changing consumer trends and anthropogenic pressures on marine resources.

THE SEAFOOD VALUE CHAIN RELIES ON, AND IMPACTS, NATURAL CAPITAL

The production of seafood is almost entirely reliant on natural resources, but it impacts them negatively in multiple ways. The primary one is overfishing, but there are others.

Below we briefly describe each of these issues, that can be categorised as follows:

- How much seafood is harvested from the sea: overfishing is the key issue, further compounded by Illegal, Unreported and Unregulated (IUU) fishing.
- How that seafood is harvested: multiple industrial fishing practices further compound the issue of declining fish stocks by causing additional direct pressure, including ghost fishing or bycatch, or collateral damage, such as bottom trawling, that impacts the seabed.
- How we responded to overfishing: the development of aquaculture as a way to alleviate pressure on wild fish stocks has resulted in pressure on specific fish species used as feed and also locally disrupts marine ecosystems. Figure 3 outlines a selection of these issues, briefly discussed below.

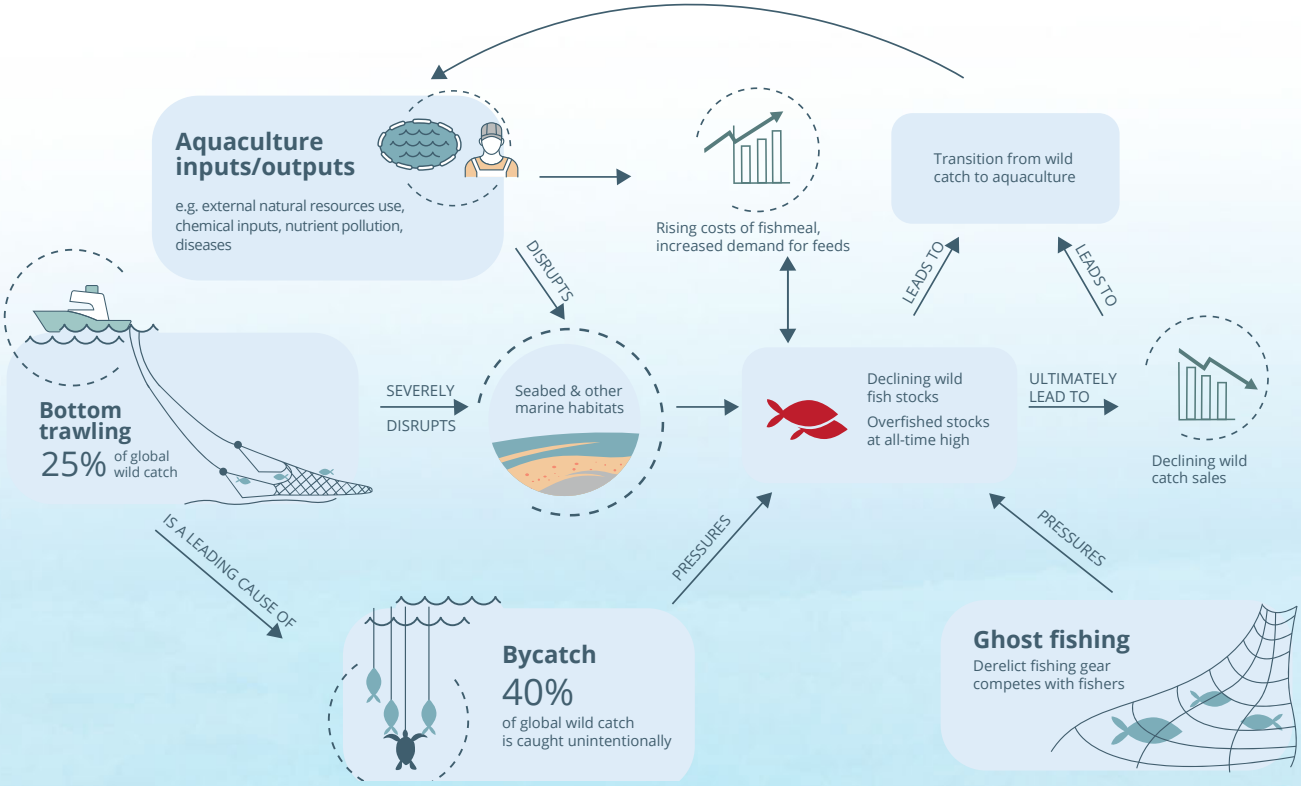


Figure 3: *Selection of Natural Capital Issues for Companies Producing Seafood.*

Too much seafood is harvested from the sea: the continuous issue of overfishing

A fishery is said to be overfished when its biomass drops below a prescribed threshold, typically the level required to produce maximum sustainable yield (MSY).

Growing global demand for seafood (from 9 kgs per capita in 1961 to 21 kgs in 2016) and unsustainable management of fisheries are the primary drivers of overfishing and have led to a decline in fish stocks.[10]

Two key approaches have been used to reduce overfishing:

- Regulation: through e.g. the introduction of fishing quotas for some species in some areas
- Aquaculture: the farming of some species (e.g. salmon or bluefin tuna)

Yet while multiple fish stocks have been allowed to recover thanks to these mitigation techniques and while aquaculture has indeed developed significantly (+527% in volume terms between 1990 and 2018), overfishing has led to a worsening of fish stocks in recent decades:

- in 2017, 34% of the world's fish stocks were overfished – an all-time high
- in 1974, only 10% of fisheries were overfished
- the proportion of overfishing was the same in 1990[11]

These statistics from the FAO[X] rely on official data – noting that 29% of member states do not provide data – and do not incorporate bycatch or IUU fishing. Some studies have argued that the **true extent of overfishing is therefore significantly underreported**.[12]

Looking ahead, the FAO expects world seafood production to increase, but at a rate that slows down over time. It is, however, very difficult to make forecasts for long-term fish production. For instance, forecasts made by the FAO for 2010 fish production in 1994 massively underestimated actual wild-catch (by 49%) and aquaculture (by 90%) volumes in 2010 – see Table 3.

Table 3: Comparing FAO Forecasts for 2010 Global Seafood Production to Actual 2010 Seafood Production.[13]

Year	Wild-catch (mn tonnes)	Aquaculture (mn tonnes)	Total
1993 Actual	56.5	15.8	72.3
2010 Forecast (1994)	60.0	31.0	91.0
2010 Actual	89.1	59.0	148.1
Difference	49%	90%	63%

In addition, when forecasts for 2010 were made in 1994, the percentage of fish stocks that was underfished was five times higher than it is now, leaving significant room for upside in wild-catch forecasts. It is less the case now, when only 6% of global fish stocks are underfished.[14]

Japan illustrates very well the consequences of overfishing: Japan's seafood production peaked in 1985 at 12.8 million tonnes and has since decreased by two thirds to 4.3 million tonnes in 2017. This has caused Japan's share of global seafood production (including aquaculture) to fall by 85%, from 13.4% in 1985 to 2.2% in 2017.[15]

Too much seafood is harvested from the sea. In addition, increased direct and indirect pressures on marine ecosystems and food stocks are caused by the way seafood is currently harvested.

X Food and Agriculture Organisation

Bottom trawling

Like most human activities, all industrial fishing practices have an impact on the environment. One of them - bottom trawling – is often singled out as possibly the most destructive industrial fishing practice, because it generates a quarter of seafood landings globally but is responsible for up to half of all discarded fish and marine life worldwide.[16, 17]

Already banned in multiple places worldwide (including in some areas of the Mediterranean, Indonesia and 90% of the US coast),[18] bottom trawling negatively impacts the seabed and the ecosystems that rely on it (hence future wild-catch sales as well), but it also indirectly impacts aquaculture operations, which are reliant on regulating ecosystem services disrupted by bottom trawlers, such as nutrient cycling. Please see page 72 for more details.

Ghost fishing

Every year, 800,000 tonnes of fishing gear is lost or discarded in the sea.[19] As a result, so called "ghost" nets make up at least 46% of the Great Pacific Garbage Patch, itself three times the size of France.[20] Fish become caught in these nets representing a form of competition to wild-catch fishing. Ghost fishing leads to a decrease in future wild-catch revenue and eventually results in higher operating expenses (cost of tracing, detecting, finding, removing and renewing ghost gear). Please see page 62 for more details.

Bycatch

Every year, for every 5 tonnes of fish caught by fishing companies globally,[21] another 2 tonnes of marine animals are caught unintentionally. Bycatch puts pressure on marine populations and limits fisheries' yields – by as much as 7% in the US territorial waters and most likely more in other areas where the bycatch rate is higher. Please see page 61 for more details.

In Japanese territorial waters, the bycatch rate is relatively low (13%, vs 40% on average at the global level). Japanese seafood companies, however, operate globally, and therefore have a global footprint.[22]

Too much seafood is harvested from the sea, and how it is harvested further compounds the issue of overfishing. In addition, one of the key market-based approaches to reduce overfishing (aquaculture) also comes with a series of natural capital issues.

Inputs and outputs linked to aquaculture operations

Aquaculture is developing fast as an answer to the depletion of marine resources. Once scaled, it also tends to be a more profitable proposition than the capture of fish at sea. For instance, at Nissui, the second largest seafood company in the world, aquaculture generated an operating margin of 11.9% in FY 2019, vs. 3.3% and 1.5% respectively for wild-catch fishing and processing.[23] However, aquaculture comes with a series of natural capital issues: diseases, chemical inputs, nutrient pollution and feeding methods disrupt marine ecosystems at and around aquaculture farms:

- Excessive use of antibiotics, anti-foulants and pesticides, or the use of banned chemicals, can have unintended consequences for marine organisms and human health.
- Excess food and fish waste increase the levels of nutrients in the water and have the potential to lead to oxygen-deprived waters that stress aquatic life.
- Chemicals and excess nutrients from feed and faeces disturb the flora and fauna in the sea and on the ocean bottom.

In Japan, the fast-developing farming of bluefin tuna does not come without environmental impacts. The country accounts for 90% of the global bluefin tuna market.[24] Around 15 kg of baitfish is needed to feed every kg of bluefin tuna eventually produced, vs a ratio for salmon, for instance, of 5:1 using baitfish and 1:1 using dried feed.[XI, 25, 26] These high feeding costs weigh on the stock of species used as baitfish. Because 93% of the bluefin tuna farmed is harvested from the wild, the development of this business does not yet alleviate the pressure on the stock of wild bluefin tuna. Please see the Planet Tracker report 'Bonds for Ponds' for a discussion of the sustainability of feeds for aquaculture.

Too much seafood has been harvested from the sea (both globally and in Japan), and both the way it is harvested and the main answer to that core issue (the development of aquaculture) come with natural capital impacts. How does that translate into economic terms?

XI This comparison needs to be put into perspective: bluefin tuna is typically harvested from the wild, whilst salmon is produced in closed cycle in aquaculture farms.

THE PRODUCTION AND CONSUMPTION OF SEAFOOD ARE DECLINING IN JAPAN

Seafood production is declining, partly due to its own impact on the environment

Domestic production of seafood has been impacted by a combination of natural issues - see Figure 4 - including:

- Overfishing (which led to competition from other fishing nations)
- Ocean pollution
- Climate change.[27]

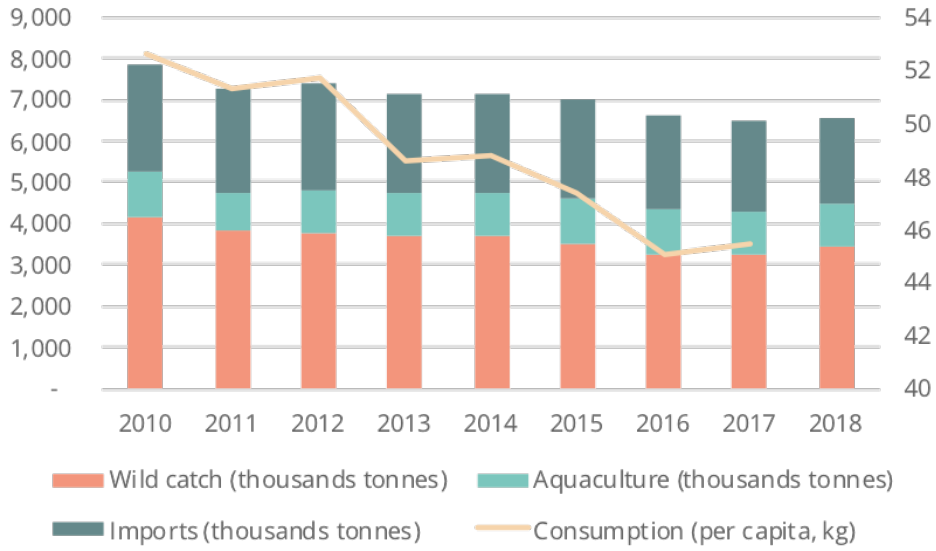


Figure 4: *Japan Seafood Per Capita Consumption, Production (Wild-catch + Aquaculture) and Imports.*[28]

Imports of seafood to Japan also declined in the period, primarily due to a significant decrease in imports of species of small pelagic fish used as fishmeal in aquaculture (see page 79).[29]

In addition, the disruptions caused by the production of seafood on ecosystems themselves have contributed to reduced harvesting volumes, in a negative feedback loop. For instance, a reduction in fishing quotas for overfished stocks directly translates into lower wild-catch revenue. Instead, from page 51 of this report, Planet Tracker demonstrates how more sustainable Practices can improve revenue and other key financials for the Japanese seafood industry, completing the recommendations previously outlined in 'Perfect Storm'.

In addition to these natural issues, seafood production has also been impacted by lower demand.

Seafood consumption is declining fast in Japan

In contrast to global growth in seafood consumption per capita (+27% between 2001 and 2017), the Japanese population is transitioning away from seafood, with a 35% decline in per capita consumption between 2001 and 2017.[30]

The decline in fish consumption is especially significant among the younger population (aged below 40 years).[31] It can be attributed to several factors, including:

- Westernisation of diets: consumption of beef, chicken or pork is on the rise, with meat consumption per capita overtaking fish in 2006[32]
- Food safety concerns: linked to the Fukushima accident[33]
- Convenience: fish is often regarded as fiddlier to prepare than other types of food Those aged 40 or below prefer processed food while older generations (60 years of age and over) buy three times more fresh fish than those aged below 40 years.[34]

Unlike in other countries such as the UK,[35] changes in seafood prices in Japan are not believed to play a major role in long-term changes in per capita consumption.[36, 37]

Overall, among countries with a high consumption of seafood (30 kilograms per capita or more), Japan is the largest economy that is seeing the steepest decline in its seafood consumption per capita – see Table 4.

Table 4: *Seafood Per Capita Consumption (PCC) and 2010-2017 Change in Seafood PCC by Country, where Seafood PCC > 30 Kilograms and where Seafood PCC is Declining*[38]

Country	2017 Seafood Per Capita Consumption (kg)	Change in Seafood PCC (2010-2017)
Maldives	90	-53%
Lithuania	33	-23%
Solomon Islands	30	-16%
Japan	**45**	**-14%**
Saint Kitts and Nevis	36	-8%
Finland	34	-7%
Myanmar	47	-6%
Norway	51	-5%
Malaysia	58	-5%
Antigua and Barbuda	53	-5%
Macao	56	-3%
South Korea	55	-3%
France	34	-1%
French Polynesia	47	-1%
Samoa	46	-1%

In this unfavourable demand and supply context, further impacted by negative natural capital-related feedback loops, one could be led to think that sales, profits and market valuations of companies exposed to seafood in Japan would be declining. Yet this is not the case.

SALES, PROFITS AND MARKET VALUATIONS OF JAPANESE COMPANIES EXPOSED TO SEAFOOD ARE ALL GROWING

70 listed Japanese companies are exposed to seafood

Planet Tracker has identified 70 companies headquartered in Japan which are listed on the Tokyo Stock Exchange (owned by the Japan Exchange Group) and are exposed to seafood (meaning that at least part of their revenue is dependent either on wild fish stocks or farmed fish). We have further divided this universe (called the Planet Tracker Universe in this report) into seven sub-sectors – see Table 5 and Appendix A.

Table 5: *Splitting Japanese Companies Exposed to Seafood into Subsectors.*[39]

Subsector	Number of companies	Definition	Examples of companies
Food Producers	14	Companies engaged in the manufacture of food products, including seafood, but where seafood does not constitute the majority of the activity	• Hagoromo Foods • Toyo Suisan Kaisha
Seafood Producers	11	Companies where seafood processing, aquaculture, or wild-catch is the key activity	• Maruha Nichiro • Kyokuyo
Feed Producers	4	Companies where the production of feed for livestock in general and aquaculture in particular is the main activity	• Feed One • Nichiwa Sangyo
Food Retailers/ Wholesalers	11	Companies engaged in the retail or wholesale of food products, including seafood	• Maxvalu Tokai • JM Holdings
Seafood Retailers/ Wholesalers	10	Companies where the wholesale or retail sale of marine products is the key activity	• Chuo Gyorui • Tohto Suisan
Restaurants	8	Companies engaged in the food service industry, where operating restaurants is the key activity and where seafood constitutes at least a significant share of the activity	• Tokyo Ichiban Foods • Uoki
Conglomerates/Other	12	Large companies engaged in more than two different sectors or any other company with key exposure to marine products, such as manufacture of fishing vessels and fishing hardware	• Mitsubishi • Nitta Gelatin

- *Food Producers* are companies engaged in the manufacture of food products, including seafood, but where seafood does not constitute the majority of the activity.
- *Seafood Producers* are companies where seafood processing, aquaculture or wild-catch is the key activity. We combined processing with aquaculture and wild-catch as we found no company involved solely in either aquaculture or wild-catch.
- *Feed Producers* are companies where the production of feed for livestock in general, and aquaculture in particular, is the main activity.
- *Food Retailer/Wholesalers* are companies engaged in the retail or wholesale of food products, including seafood.
- *Seafood Retailer/Wholesalers* are companies where the wholesale or retail sale of marine products is the key activity.
- *Restaurants* are companies engaged in the food service industry, where operating restaurants is the key activity and where seafood constitutes at least a significant share of the activity.
- *Conglomerates/Other* are large companies engaged in more than two different sectors or any other company with key exposure to marine products, such as manufacture of fishing vessels and fishing hardware.

See below for a list of each company in each sub-sector.

***Table 6:** List of Companies Exposed to Seafood by Subsector.*[40]

Food Producers	Seafood Producers	Feed Producers	Seafood Retailers/ Wholesalers	Food Retailers/ Wholesalers	Restaurants	Conglomerates / Other
AHJIKAN CO., LTD.	DAIREI CO.LTD.	FEED ONE CO. LTD.	Chubu Suisan Co., Ltd.	ALBIS Co., Ltd.	Daisyo Corporation	Akasaka Diesels Ltd.
Aohata Corporation	Global Food Creators Co., Ltd.	Higashimaru Co., Ltd.	Chuo Gyorui Co., Ltd.	Daikokutenbussan Co., Ltd.	General Oyster, Inc.	Furuno Electric Co., Ltd.
Hagoromo Foods Corporation	Ichimasa Kamaboko Co., Ltd.	Nichiwa Sangyo Co., Ltd.	Daisui Co., Ltd.	Halows Co., Ltd.	GOURMET KINEYA CO., LTD.	Hanwa Co., Ltd.
Hayashikane Sangyo Co., Ltd.	Kyokuyo Co., Ltd.	Showa Sangyo Co., Ltd.	Daito Gyorui Co., Ltd.2	JM Holdings Co., Ltd.	Kaihan Co., Ltd.	Itochu Corporation
Imuraya Group Co., Ltd.	Maruha Nichiro Corp.		Hohsui Corporation	Maxvalu Kyushu Co., Ltd.	Kanmonkai Co., Ltd.	Marubeni Corporation
Kakiyasu Honten Co., Ltd.	Maruichi Co., Ltd.		Tohto Suisan Co., Ltd.	Maxvalu Tokai Co., Ltd.	Tokyo Ichiban Foods Co., Ltd.	Mitsubishi Corporation
Natori Co., Ltd.	NICHIMO CO., LTD.		Tsukiji Uoichiba Company, Limited	Nishimoto Co., Ltd.	Umenohana Co., Ltd.	Nitta Gelatin Inc.
Nichirei Corporation	Nippon Suisan Kaisha, Ltd.		Uoriki Co., Ltd.	Plant Co., Ltd.	Uoki Co., Ltd.	Nitto Seimo Co., Ltd.
NIHON SEIMA CO., LTD.	OUG Holdings Inc.		Yokohama Maruuo Co., Ltd.	S. ISHIMITSU&CO LTD		Shimano Inc.
Toyo Suisan Kaisha, Ltd.	Yokohama Gyorui Co., Ltd.		Yokohama Reito Co., Ltd.	Satoh & Co., Ltd.		Shinyei Kaisha
Wakou Shokuhin Co., Ltd.	Yonkyu Co., Ltd.			Super Value Co., Ltd.		Sojitz Corp.
Yamae Hisano Co., Ltd.						Tiemco Ltd.
Yoshimura Food Holdings KK						
Yutaka Foods Corporation						

XII Maruha Nichiro closed the acquisition of Daito Gyorui in May 2020. We kept Daito Gyorui in our list when analysing 2010-2019 performance.

Aggregating financials to exhibit trends in the Japanese seafood industry: a first

Rather than analysing each company individually, Planet Tracker aggregated the financials of each of these 70 companies over a ten-year period (2010-2019[XIII]) to exhibit general trends at the sub-sector and overall industry level. Our aim was to answer questions such as:

- Given the decline in wild-catch volumes, are sales generally trending down at Japanese companies exposed to seafood?
- How have these companies reacted to any potential decline in sales?
- Have sub-sectors heavily exposed to seafood (e.g. seafood producers) underperformed compared to others, such as food producers?
- Have companies invested abroad or engaged in mergers and acquisitions to offset the decline in wild-catch volumes?

To the best of our knowledge, no similar analysis of the intersection between the natural capital dependency and impacts of these companies and their financial health has ever been done for Japanese companies exposed to seafood.

In addition, the results of that analysis provide a powerful case study of how an entire industry of a G7 country is affected by the depletion of the natural world.

Companies in the Planet Tracker Universe account for 1.8% of the Japanese stock market

Overall, companies in our Universe had a combined market capitalisation of JPY 12.0 trillion (USD 110 billion) as of 31/12/2019, equivalent to 1.8% of the combined market capitalisation of the Tokyo Stock Exchange.

Their combined revenue was JPY 44.5 trillion (USD 409 billion) in 2019, or 5.5% of the combined revenue of all the 3,061 companies listed on the Tokyo Stock Exchange[41] – see Table 7.

Table 7: *Revenue and Market Capitalisation of Companies Exposed to Seafood.*[42]

Universe	Number of Listed Companies	Combined 2019 Revenue (JPY bn)	% of Total Revenue		Combined 2019 Market Cap (JPY bn)	% of Total Market Cap		Market Cap / Revenue Ratio
All Companies Listed on Tokyo Stock Exchange	3,061	807,070	100.0%		679,683	100%		84%
Constituents of TOPIX100 Index[XIV]	100	369,408	45.8%		292,868	43.1%		79%
Companies Exposed to Seafood	70	44,477	5.5%	100%	11,952	1.8%	100%	27%
Food Producers	14	1,915	0.2%	4.3%	1,128	0.2%	9.4%	59%
Seafood Producers	11	2,689	0.3%	6.0%	394	0.1%	3.3%	15%
Feed Producers	4	523	0.1%	1.2%	138	0.0%	1.2%	26%
Food Retailers/ Wholesalers	11	1,443	0.2%	3.2%	330	0.0%	2.8%	23%
Seafood Retailers/ Wholesalers	10	949	0.1%	2.1%	126	0.0%	1.1%	13%
Restaurants	8	159	0.0%	0.4%	82	0.0%	0.7%	52%
Conglomerates / Other	12	36,798	4.6%	82.7%	9,754	1.4%	81.6%	27%

Note: 1 USD = 105 JPY as of 11/2020

XIII We excluded 2020 from our analysis to avoid the disruptions caused by COVID-19.
XIV The 100 most liquid large companies in Japan by market capitalisation

Average 2% revenue growth in the Planet Tracker Universe

Over the 2010 to 2019 period, revenue in the Planet Tracker Universe grew by 2.1% p.a. on average, driven by food retailers and conglomerates and despite slower growth for seafood retailers and wholesalers and declining sales for restaurants – see Figure 5.

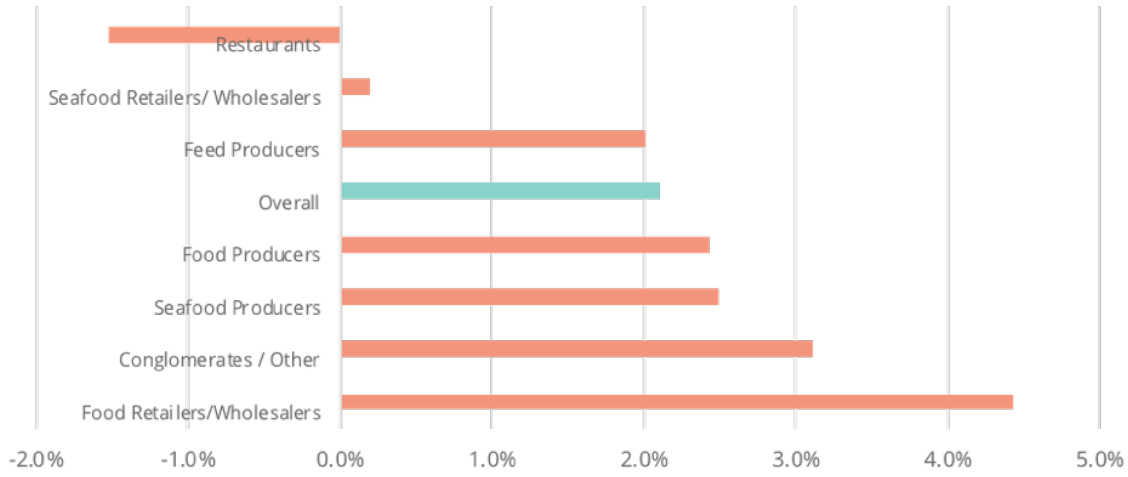


Figure 5: *2019-2019 Revenue Compound Annual Growth Rate (CAGR) by Subsector.*[43]

It is surprising to see solid revenue growth given the decline in seafood resources outlined earlier.

The median revenue CAGR (Compound Annual Growth Rate) was slightly lower at 1.7%. 10% of the companies in the Planet Tracker Universe grew revenue by 7.1% or more every year and 10% saw an average revenue decline of 2.9% or more.

By comparison, the average revenue growth of companies in the TOPIX 100 index (the 100 most liquid large companies in Japan by market capitalisation) was 3.9% over the period, with a median growth rate of 3.5%.

Net profits and market capitalisations on the rise between 2010 and 2019

Market capitalisations in each subsector have risen between 2010 and 2019. Net profits have been on the rise too - just as they have been for TOPIX100 companies - in every subsector except restaurants. This upward trend is most pronounced for food producers and seafood producers – see Figure 6.

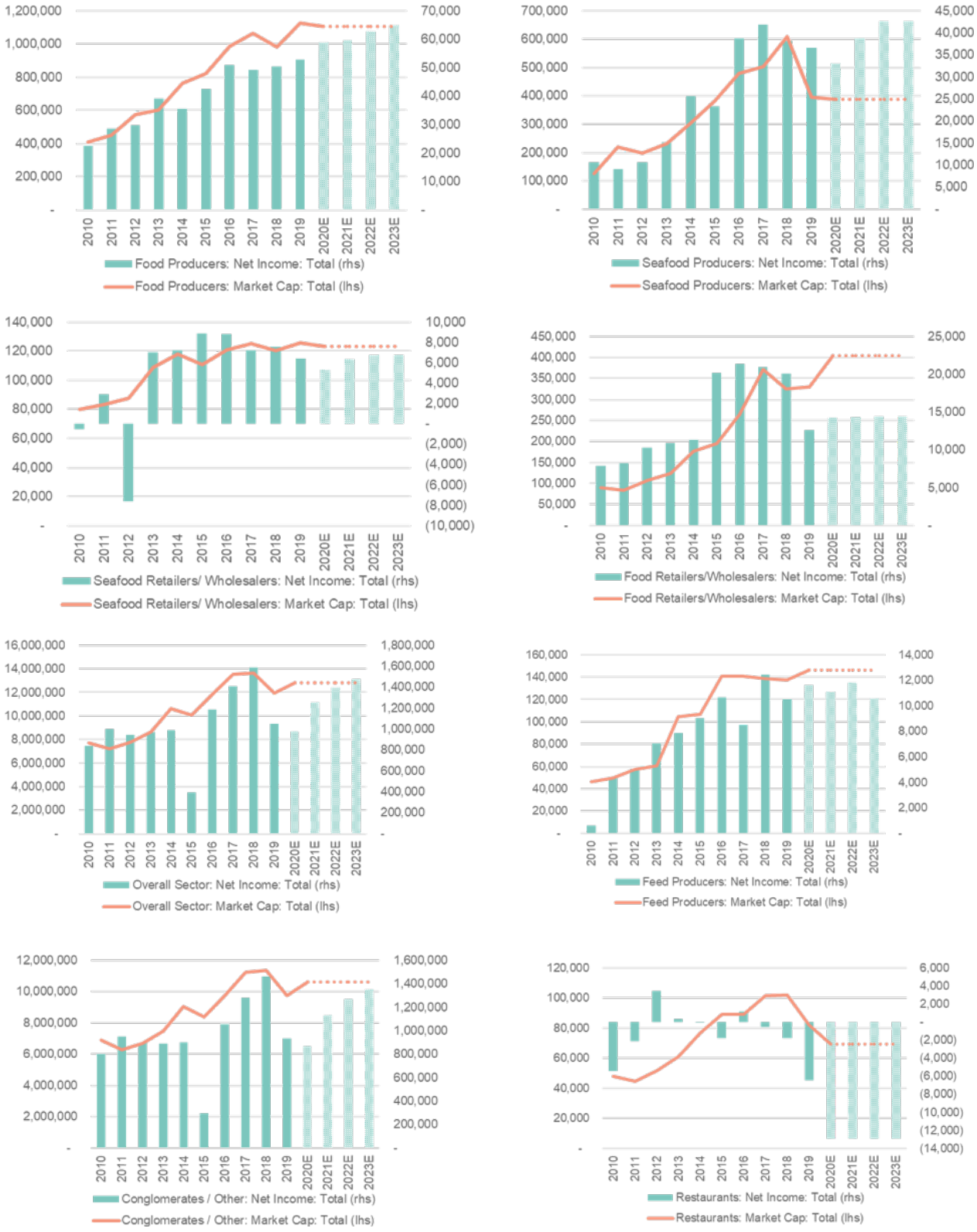


Figure 6: *Aggregated Market Capitalisation and Net Income (in JPY mn) by Subsector.*[44]

Note: 1 USD = 105 JPY as of 11/2020

Further growth in net income in the sector is anticipated: using consensus numbers when available and assuming no growth in net profit when no consensus number was available, we compute that the market expects net income in our Universe to grow by 2.5% p.a. overall between 2019 and 2021.

Despite a decline in seafood production, consumption and imports in Japan over 2010-2019, sales, net profits and market capitalisations of Japanese companies exposed to seafood have risen over the period. How is that possible?

PLANET TRACKER EXPLAINS:
HOW JAPANESE SEAFOOD COMPANIES BYPASSED NATURAL CAPITAL CONSTRAINTS

Our research reveals that foreign expansion, acquisitions, vertical integration, cost-cutting and de-leveraging allowed the Japanese seafood sector to grow its revenue and profits, despite the core constraints of declining fish stocks, wild-catch volumes and overall seafood production and consumption. These financial manoeuvres have their limits though.

BYPASSING NATURAL CAPITAL CONSTRAINTS TO GROW REVENUE USING FOREIGN EXPANSION AND ACQUISITIONS

Our analysis of the financials of Japanese companies exposed to seafood revealed that:

- Growth in revenue and profits was achieved despite falling seafood production numbers as a result of overfished stocks
- A range of financial manoeuvres was used by management to bypass these natural capital constraints. We outline the techniques used in this section

This means that **companies' management have succeeded in growing revenue and profits without really addressing the issues affecting the natural capital on which the entire sector relies. We recommend investors take notice.**

Japanese companies exposed to seafood have switched to faster-growing foreign markets

On average, domestic revenue in our Universe grew by 1.2% p.a. over the 2010 to 2019 period, whilst foreign revenue rose by 8.0% p.a. on average. The higher growth of foreign-based revenue was observed in all relevant subsectors – see Figure 7.

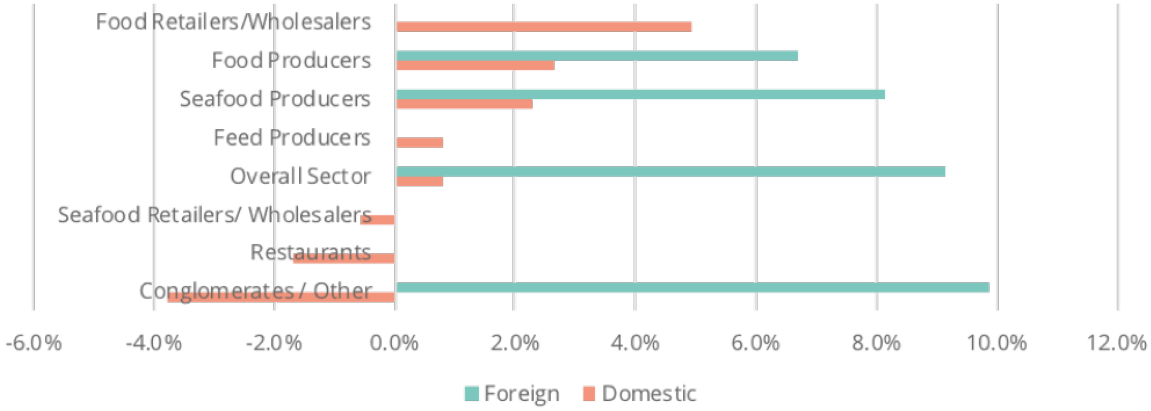


***Figure 7:** 2010-2019 Revenue CAGR by Subsector and Geography.*[45]
Note: there is not enough data to display foreign revenue growth for retailers/wholesalers, feed producers and restaurants.

Seafood producers and conglomerates, the two subsectors with the fastest growth in foreign revenue between 2010 and 2019, had the highest exposure to foreign markets in 2019 – see Figure 8.

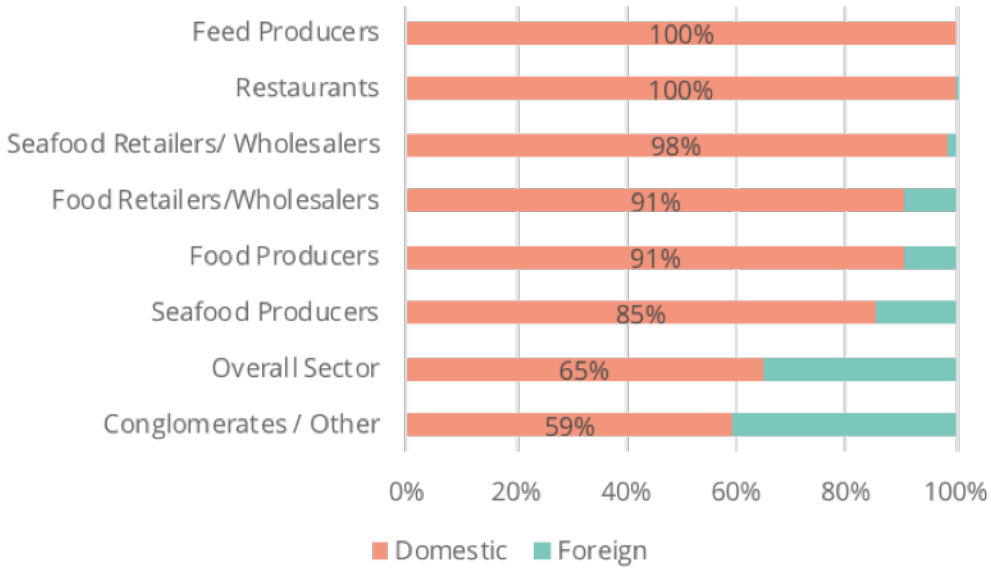


Figure 8: *Split of 2019 Revenue by Geography.*[46]

Domestic revenue growth of companies in the TOPIX 100 index was 1.0% over the period, whilst foreign revenue growth was 7.9%, i.e. similar rates to companies exposed to seafood. The higher proportion of foreign revenue for TOPIX 100 companies compared to the Planet Tracker Universe explains the higher overall growth rate[47] – see Table 8.

Table 8: *Revenue Drivers of Japanese Companies – Seafood Exposed Companies vs TOPIX 100 constituents.*[48]

Subsector	Seafood Exposed Companies	TOPIX 100 Constituents
2010-19 Revenue CAGR	2.1%	3.9%
Proportion of Domestic Revenue (2010)	65%	59%
Proportion of Domestic Revenue (2019)	78%[XV]	49%
2010-19 Domestic Revenue CAGR	1.2%	1.0%
2010-19 Foreign Revenue CAGR	8.0%	7.9%

Favourable currency impact

Growth in foreign revenue was most likely helped by the weakening of the yen against the US dollar and other key currencies such as the Chinese yuan (CNY) or the Korean won (KRW) – see green bars/positive numbers in Figure 9 below - although it was partially offset by the strengthening of the Japanese currency against currencies such as the euro – see negative numbers/orange bars in Figure 9 below.[XVI] US and Europe are the key export regions for the majority of these companies.[49]

XV This is the weighted average proportion of domestic revenue. The simple average is much higher (90% in 2019, down from 95% in 2010)

XVI When a currency such as the yen weakens against another one such as the US dollar, it makes the exports of that country appear cheaper in local currency terms

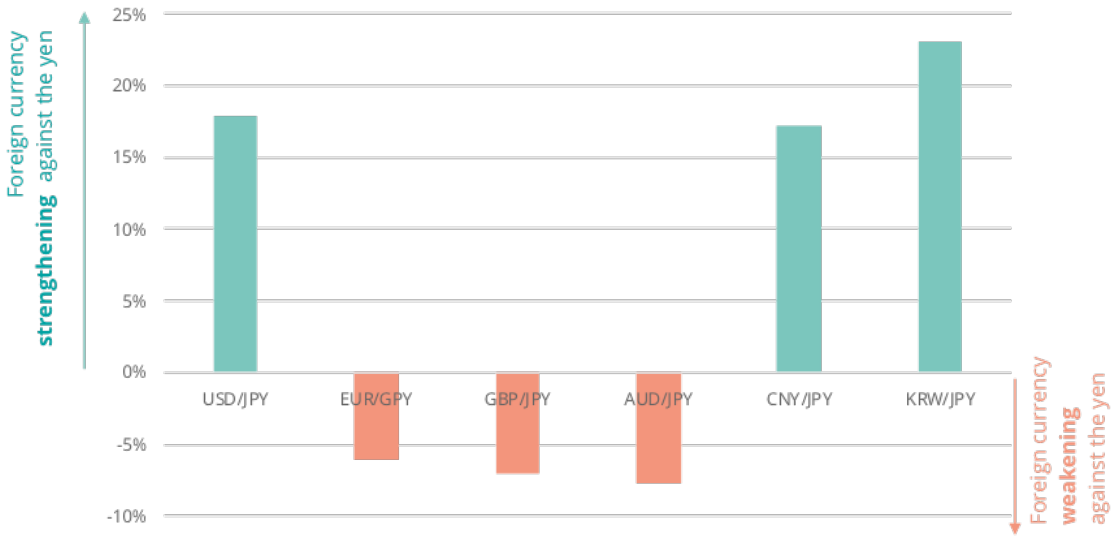


Figure 9: *Evolution of Multiple Currencies against the Yen, 01/01/2010-31/12/2019.*[50]

Japanese companies are the preferred target for acquisitions, which added c.11% to the period's revenue

We have analysed all the M&A transactions made by the 70 companies included in the Planet Tracker Universe. In total, 292 acquisitions were made over the 2010 to 2019 period. The combined revenue of targets (when disclosed) is JPY 2 trillion (USD 19 billion) or 8% of the Planet Tracker Universe's 2010 revenue. If we assume that the average revenue of the 103 targets that did not disclose their revenue was similar to those that did, we estimate that 13% of the revenue growth seen in the 2010s was linked to acquisitions. However, because transactions where the target's financials are not disclosed tend to be smaller transactions, the actual contribution from M&A is probably between these two estimates, at around 11%.

This indicates that Japan remains a strategic market for Japanese companies exposed to seafood, despite the decline in seafood production – see Figure 10.

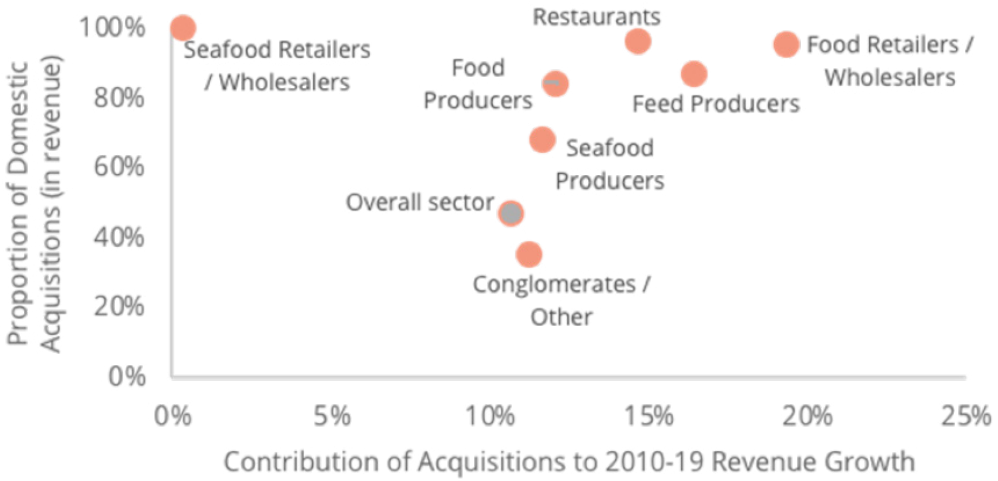


Figure 10: *Contribution of Acquisitions to 2010-19 Revenue Growth and Proportion of Revenue Acquired from Targets Based in Japan.*[i]

Interestingly, for all subsectors except conglomerates and seafood producers, the majority of the revenue acquired was from in-country acquisitions.

Retailers and wholesalers almost exclusively purchased Japan-based companies. However, whilst retailers or wholesalers selling primarily seafood products do not rely much on M&A, those for which seafood is not the key driver of sales (a subsector with higher growth) rely significantly on domestic M&A.

Faced with revenue decline in their domestic market, conglomerates tend to purchase companies outside of Japan and M&A represents an important revenue driver for them.

On the other hand, restaurants tend not to acquire abroad, even though their domestic market is shrinking, due to declining seafood consumption.

Diverging patterns and common trends for revenue generation across the seafood value chain in Japan

To grow revenue when volumes are trending down due to the natural capital issues described earlier, two main tools were therefore used: internationalisation and acquisition.

Figure 11 below outlines to what extent each subsector across the seafood value chain used these techniques, as well as the quantum of domestic revenue growth.

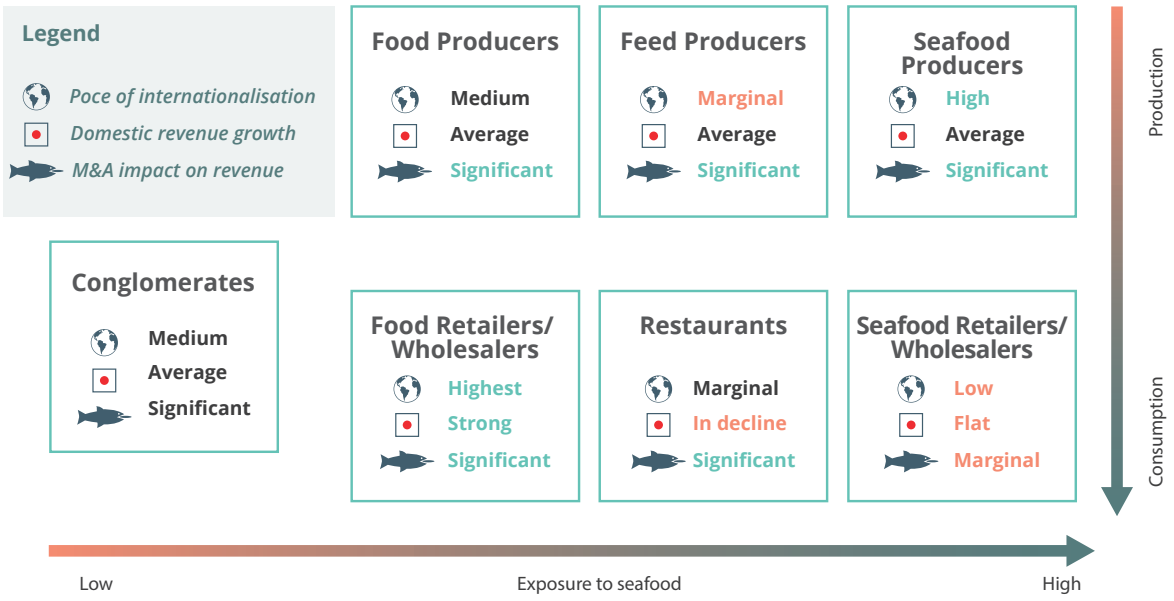


Figure 11: *Drivers of Revenue Growth across the Japanese Seafood Value Chain.*[51]

DESPITE RISING INVESTMENTS, NET PROFIT MARGINS WERE HELPED BY VERTICAL INTEGRATION, COST-CUTTING AND DE-LEVERAGING

In addition to the techniques used to grow revenue despite declining seafood volumes (internationalisation and acquisitions), Japanese companies exposed to seafood used additional tools to grow profits: vertical integration, cost-cutting and de-leveraging.

Vertical integration

A key feature of the Japanese seafood industry has been vertical integration. The main goal is to generate more value from processing and downstream operations (retail and restaurants). An example of a company pursuing that strategy is Tokyo Ichiban Foods.

CASE STUDY:
TOKYO ICHIBAN FOODS, INTEGRATED FROM FARM TO PLATE

Classified as a Restaurant in our analysis, the company is engaged in the farming of blowfish, tuna and yellowtail, the processing and distribution of those seafood products and their sale in shops and restaurants. "Becoming a vertically integrated comprehensive fisheries company" is the company's key philosophy.[52]

Potentially as a result of that strategy, average sales growth at Tokyo Ichiban has been the highest among its peers and EBIT margins reached 4.1% in 2019, again the highest among peers, after being negative in 2010.

Once a company is fully vertically integrated, however, little incremental margin benefit can be generated. This is typically when companies use other margin enhancement tools, such as cost-cutting.

Cost-cutting

Comparing progressions in gross margins and EBIT margins in each subsector between 2010 and 2019 reveals an absence of correlation between the two: improvements in gross margins do not typically result in increased EBIT margins and vice-versa – see Table 9.

Table 9: *Directional Trend of Gross Margins and EBIT Margins by Subsector (2010-2019).*[53]

Subsector	Trend in Gross Margins	Trend in EBIT Margins
Feed Producers	Stable	Up
Seafood Producers	Down	Up
Seafood Retailers/Wholesalers	Stable	Up
Food Producers	Stable	Stable
Conglomerates/ Other	Up	Stable
Food Retailers/Wholesalers	Up	Down
Restaurants	Up	Down

When looking at companies with the best or worst change in EBIT margin, it becomes clear that the key driver of EBIT margin progression is the change in selling, general and administrative (SG&A) expenses – i.e. non-production costs: all but one of the ten companies with the best EBIT margin compression also reduced their SG&A as a percentage of sales (i.e. generated efficiencies) and all but three of the ten companies with the biggest decline in EBIT margin also saw a strong rise in SG&A as a percentage of sales – see Tables 10 and 11.

Table 10: *Top 10 Japanese Companies Exposed to Seafood Ranked by 2010-19 EBIT Margin Change.*[54]

Company	Subsector	Change in EBIT Margin	Change in Gross Margin	Reduction/ (Increase) in SG&A as a % of sales
Shimano Inc.	Conglomerates / Other	6.5%	4.0%	2.6%
Tokyo Ichiban Foods Co., Ltd.	Restaurants	5.7%	-8.4%	14.1%
GOURMET KINEYA CO., LTD.	Restaurants	5.0%	-2.2%	7.2%
Sojitz Corp.	Conglomerates / Other	3.6%	7.1%	-3.5%
Nitto Seimo Co., Ltd.	Conglomerates / Other	3.3%	2.8%	0.5%
Nichirei Corporation	Food Producers	2.9%	-3.0%	5.9%
Uoriki Co., Ltd.	Seafood Retailers/ Whole-salers	2.7%	0.4%	2.3%
Nippon Suisan Kaisha, Ltd.	Seafood Producers	2.6%	-3.0%	5.6%
Daisyo Corporation	Restaurants	2.5%	-3.6%	6.2%
Showa Sangyo Co., Ltd.	Feed Producers	2.4%	1.5%	0.9%

Table 11: *Bottom 10 Japanese Companies Exposed to Seafood Ranked by 2010-19 EBIT Margin Change.*[55]

Company	Subsector	Change in EBIT Margin	Change in Gross Margin	Reduction/ (Increase) in SG&A as a % of sales
Umenohana Co., Ltd.	Restaurants	-14.3%	-5.1%	-9.2%
Nitta Gelatin Inc.	Conglomerates / Other	-8.2%	-1.4%	-6.8%
Marubeni Corporation	Conglomerates / Other	-8.1%	-3.9%	-4.2%
NIHON SEIMA CO., LTD.	Food Producers	-6.1%	-7.7%	1.6%
Plant Co., Ltd.	Food Retailers/Wholesalers	-6.1%	0.6%	-6.7%
Mitsubishi Corporation	Conglomerates / Other	-6.1%	-10.5%	4.4%
Super Value Co., Ltd.	Food Retailers/Wholesalers	-5.1%	0.5%	-5.5%
Higashimaru Co., Ltd.	Feed Producers	-4.2%	0.9%	-5.2%
Akasaka Diesels Ltd.	Conglomerates / Other	-3.9%	-1.5%	-2.3%
Ichimasa Kamaboko Co., Ltd.	Seafood Producers	-3.6%	-3.8%	0.2%

On average, non-production costs (excluding depreciation and amortisation) accounted for 6% of sales in our Universe in 2019, down from 10% in 2010. As a percentage of sales, they are high and stable at restaurants (where staff and rent costs are high) and declining in every other subsector except food retailers and wholesalers.

Ignoring any difference in reporting across companies, this potentially indicates that companies in our Universe have used "cost-cutting" as a key strategy to grow margin – see Table 12.

Table 12: *Non-Production Costs (Measured by Difference between Gross Margins and EBITDA Margins).*[56]

Subsector	Non-production costs as % of sales, 2019	Non-production costs as % of sales, 2010
Overall Universe	6%	10%
Food Producers	15%	18%
Seafood Producers	9%	11%
Feed Producers	9%	11%
Food Retailers/Wholesalers	20%	18%
Seafood Retailers/ Wholesalers	5%	6%
Restaurants	52%	53%
Conglomerates/Other	5%	9%

In addition to the social costs of aggressive cost-cutting, there are limits to that strategy: outside of Japan and outside of seafood, this is clearly illustrated by the significant share price fall in 2019 of Kraft Heinz, a food company initially praised for its determined cost-cutting efforts, but then blamed by investors for not having adapted to changing consumer preferences.[57]

Companies exposed to seafood have used foreign expansion, acquisitions, vertical integration and cost-cutting to avoid the impact of overfishing and other natural capital issues (falling seafood production) hitting revenue and operating margins. Have they succeeded?

Low and slightly declining EBIT margins

Overall, we compute that the average EBIT margin in our Universe was 1.5% in 2019, 30 basis points (bps) lower than in 2010. By contrast, EBIT margins of TOPIX100 companies were much higher (13.4% on average in 2019, although this is due to a different sectorial mix) and rising (+250bps since 2010).[58]

Restaurants typically make a loss at the EBIT level, whether they specialise in seafood products or not (Tokyo Ichiban Foods, a vertically integrated company, being a notable exception) – see Figure 12.

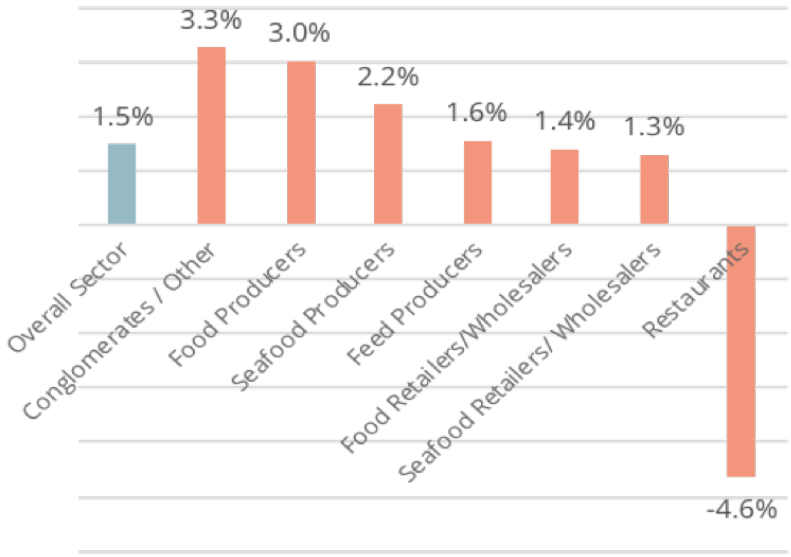


Figure 12: *2019 EBIT Margin by Sub-sector.*[59]

A key reason why margins have not progressed despite vertical integration and cost-cutting initiatives has been increased investment.

Companies are accelerating their investment in property, plant and equipment

Companies in the Planet Tracker Universe have on average invested 67% of the cash flow they generated from their operations over the last decade. TOPIX100 companies invested a much higher proportion of their operational cash flow over the same period (108%)[XVII] even though their investments in capital expenditures were of similar proportion, because they resorted much more to M&A than companies in our Universe.

Capital expenditure was the primary use of cash for companies in the Planet Tracker Universe: between 2010 and 2019, 52% of the operational cash flow was used to buy more property, plant and equipment – see Figure 13. This proportion was the highest at seafood retailers (137%), restaurants (111%) and seafood producers (81%), and around 50-70% for all other sub-sectors.[XVIII]

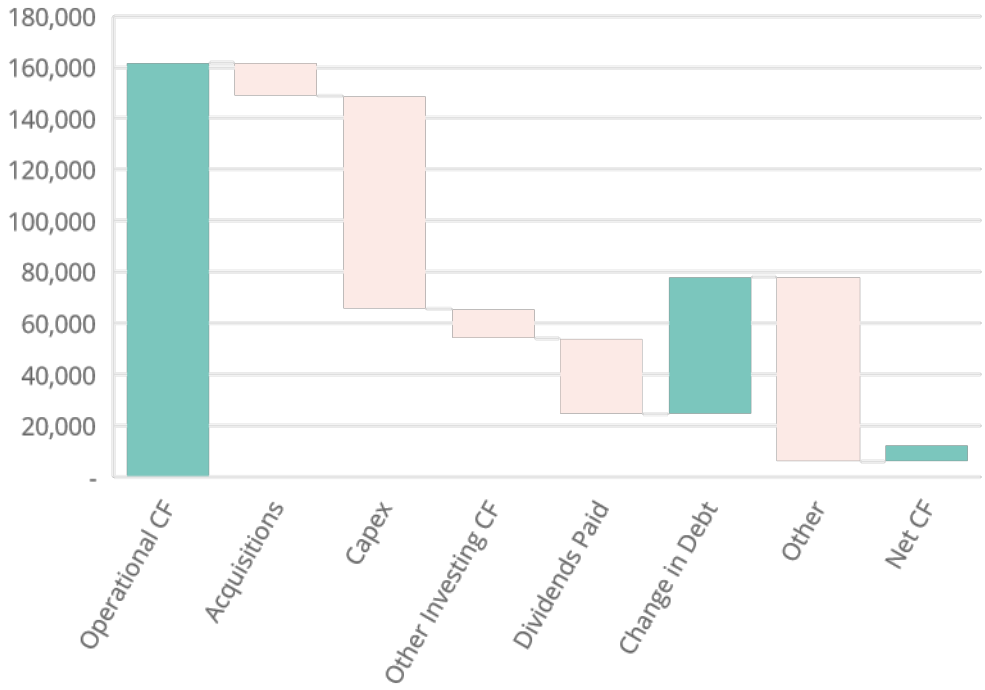


Figure 13: *Japanese Companies Exposed to Seafood - Breakdown of Cash Generation (2010-2019, in JPY '00s mn).*[60, XIX]

XVII Meaning that on average TOPIX100 companies use debt and or equity to fund the proportion of their investment that operational cash flow did not cover
XVIII Note that a proportion above 100% means that to finance capital expenditures, companies have to raise debt or equity funding.
XIX CF = cash flow

As a proportion of sales, capital expenditure has increased considerably, from 1.8% of sales in 2010 to 2.9% in 2019, a 60% increase. This is the case in every sub-sector, except conglomerates where this ratio stayed stable. It means that companies are stepping up their investment programmes and this weighs on margins – see Figure 14.

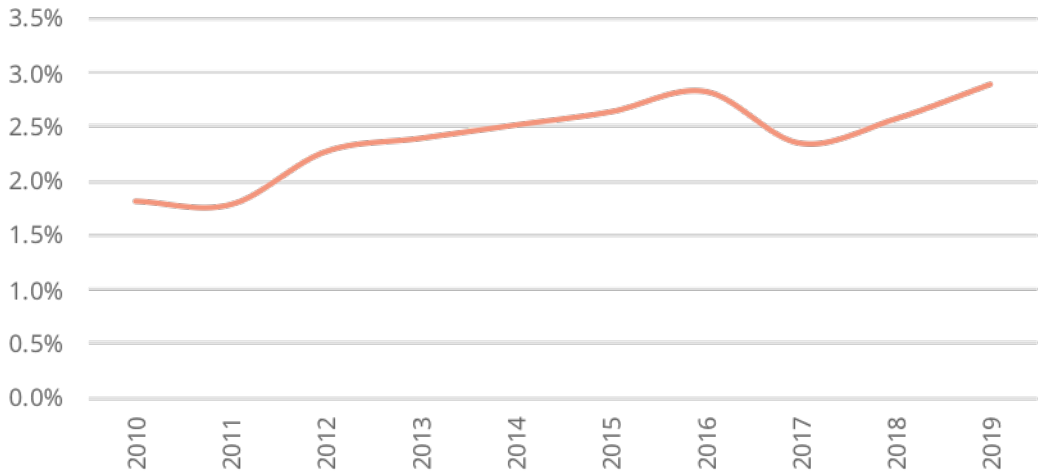


Figure 14: *Japanese Companies Exposed to Seafood – Capital Expenditures as a Percentage of Sales.*[61]

Increased exposure to aquaculture (including closed-cycle aquaculture) and renovation or expansion of manufacturing and processing facilities are the key uses of capital expenditures. By contrast, both the number and the tonnage of the Japanese fishing fleets are coming down – see Figure 15.

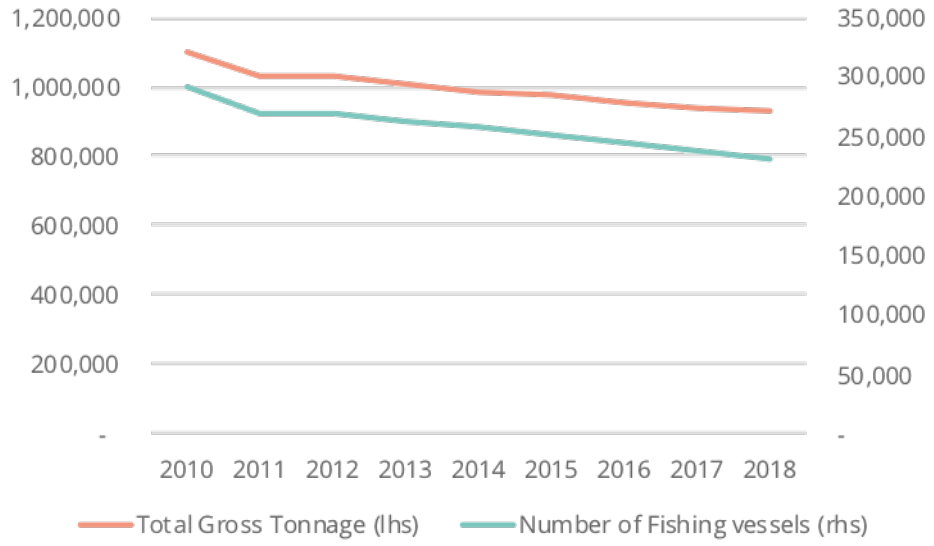


Figure 15: *Number of Fishing Vessels and Cumulative Gross Tonnage of the Japanese Fishing Fleet.*[62]

This means that companies exposed to a declining resource (seafood) have refrained from investing in further capacity at the beginning of the wild-catch supply chain (i.e. fishing vessels) but instead invested further down the supply chain (e.g. in processing) and in aquaculture. These investments have slightly impacted EBIT margins. However, that was more than offset by reduced level of debt and interest costs.

Japanese companies exposed to seafood have reduced their level of debt

Overall, Japanese companies in our Universe are de-leveraging,[XX] with net debt/EBITDA ratios on a downward trend or stable in all sub-sectors except conglomerates. Unsurprisingly, the cost of debt is also coming down, which favourably affects net profits – see Figure 16.

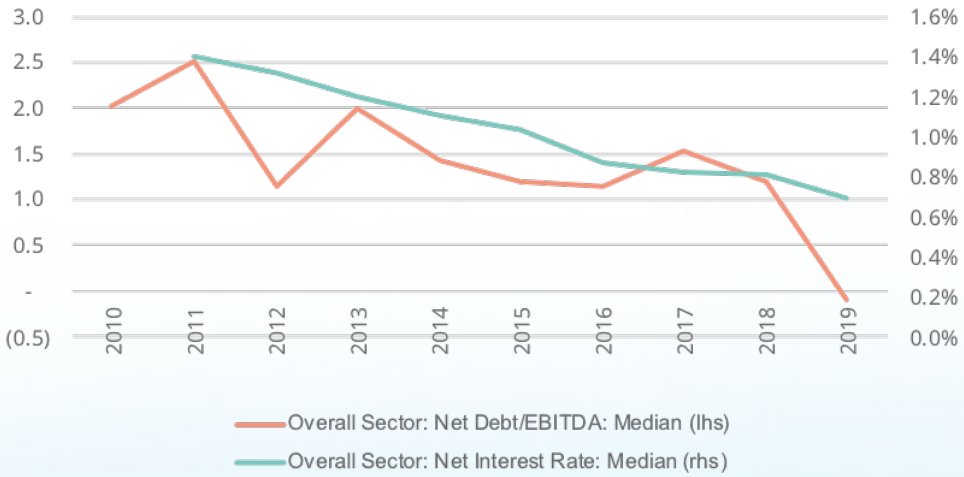


Figure 16: *Median Net Debt To EBITDA ratio and Net Interest Rate (in %) for Japanese Companies Exposed to Seafood.*[63]

This contrasts with our benchmark: after net debt/EBITDA ratios came down between 2010 and 2015, TOPIX100 companies have re-leveraged[XXI] in the second half of the past decade.[64]

XX i.e. they are reducing their level of debt relative to their profit

XXI The opposite of de-leveraged, i.e. the level of debt increased relative to profits

An example of the trends at play in the sector: Nissui

Nippon Suisan Kaisha (commonly called Nissui) illustrates the trends at play in the sector. Founded in 1911 and headquartered in Tokyo, the company is the second largest seafood producer in the world, after Maruha Nichiro. In 2016, the volumes of seafood it sourced were equivalent to 1.6% of global wild-catch volumes.[65]

Vertical integration: the company is highly integrated and mainly engages in the fishing, cultivation, purchase, processing and sale of seafood products (Marine Products division). Nissui also produces and sells frozen food, shelf-stable food and other processed food (Food Products Division). In addition, it provides cold storage, freezing and transportation services (General Logistics), as well as repair and engineering services for ships and vessels (Others). Nissui also manages the production and sale of inspection reagents and general medicines, mostly based on ingredients derived from fish (Fine Chemicals) – see Table 13.

Table 13: *Breakdown of Nissui Sales by Business and Geography in FY2019.*[66]

% of consolidated sales	Japan	North America	South America	Asia Exc. Japan	Europe	Consolidated Adjustment	Total
Marine Products	35%	7%	5%	1%	8%	(13%)	42%
Food Products	49%	9%		1%	6%	(16%)	49%
Fine Chemicals	4%			0%		0%	4%
General Logistics	5%					(2%)	2%
Others	4%			0%		(2%)	3%
Consolidated Adjustment	(26%)	(2%)	(3%)	(2%)	0%	(34%)	0%
Total	**72%**	**13%**	**1%**	**1%**	**13%**	**0%**	**100%**

Foreign expansion: The company grew its revenue by an average of 3.8% between 2010 and 2019. Out of this growth, 56% came from foreign revenue, which grew by an average of 8.1% over the period and represented 31% of the company's sales in 2019.[67]

M&A: The 13 companies Nissui acquired were primarily located in Japan (but also in France, the UK, New Zealand and Denmark) and added 15-20% to the company's revenue – and that M&A impact on revenue was likely higher in Japan.[68]

Margin evolution: Whilst the company's gross margin contracted by 300bps between 2010 and 2019, its EBIT margin improved by 260bps, to reach 3.5%.[69]

Reduction in net interest costs and de-leveraging: the average net interest rate on Nissui debt almost halved to 0.8% in 2019, from 1.5%. Its net debt/EBITDA ratio more than halved, to reach 4.4x in 2019 from 10.5x in 2010.[70]

As a result, Nissui's share price rose by 145% between 2010 and 2019, the ninth best performer within our Universe.[71]

This effectively means that investors have rewarded the techniques used to bypass the depletion of natural capital on which Nissui relies: the group is indeed particularly exposed to any further degradation in global fish stocks, given that 93% of the fish it sourced in 2016 is from the wild, with 450 species harvested from 80 countries covering 18 of the 19 ocean areas[XXII].

XXII Ocean areas defined by the FAO (e.g. Pacific Southwest, Atlantic Northeast, etc)

Out of this seafood, 12% is reported by Nissui as not being in a "healthy" condition[72] – equivalent to 181,363 tonnes of fish in just one year, or more than the total fish landed in Maldives in a year - either because its status is unclear or because it is unhealthy.

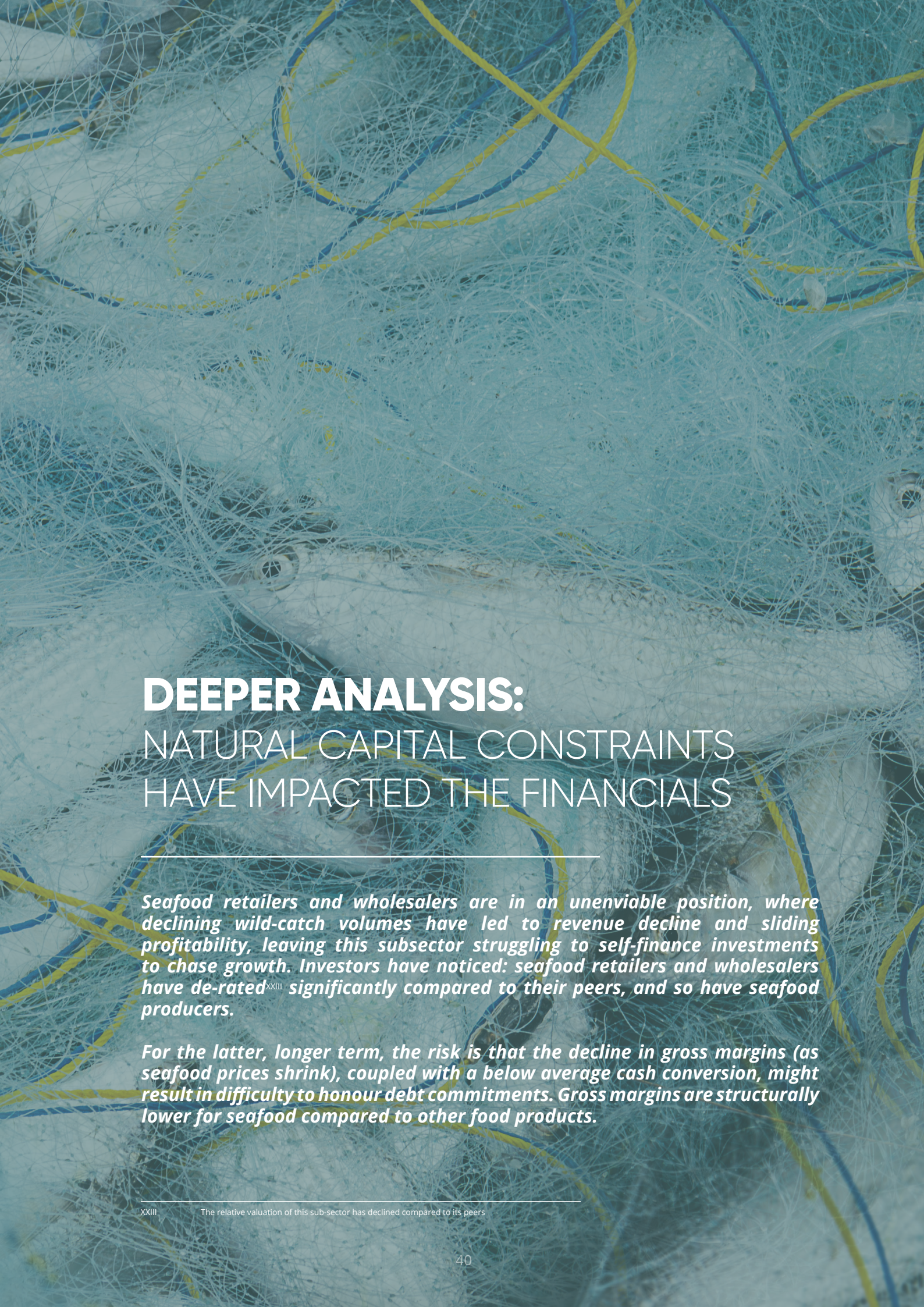
Can the Japanese seafood sector continue to ignore natural capital constraints?

Of the key drivers of revenue and profit growth for the Japanese seafood sector, two (foreign expansion and acquisitions) are able to continue although foreign exchange rate changes could take a negative turn. Cost-cutting and vertical integration can persist too, but are unlikely to continue in the long term, as both have limits. As for de-leveraging, the current low level of leverage suggests that this might no longer be an obvious option for increasing net profits.

Perhaps more importantly, deeper analysis of financial accounts reveals that some sub-sectors have started to be hit by the constraints of nature.

The next section reveals some of the ways the depletion of natural capital has translated into deteriorated financials.

We would very much expect similar patterns to be exhibited across other large industries significantly relying on and impacting natural capital assets, in other large economies.



DEEPER ANALYSIS:
NATURAL CAPITAL CONSTRAINTS HAVE IMPACTED THE FINANCIALS

Seafood retailers and wholesalers are in an unenviable position, where declining wild-catch volumes have led to revenue decline and sliding profitability, leaving this subsector struggling to self-finance investments to chase growth. Investors have noticed: seafood retailers and wholesalers have de-rated[XXIII] significantly compared to their peers, and so have seafood producers.

For the latter, longer term, the risk is that the decline in gross margins (as seafood prices shrink), coupled with a below average cash conversion, might result in difficulty to honour debt commitments. Gross margins are structurally lower for seafood compared to other food products.

XXIII The relative valuation of this sub-sector has declined compared to its peers

SEAFOOD RETAILERS AND RESTAURANTS HAVE ALREADY BEEN HIT

Declining seafood consumption translates into decreasing domestic revenue and margin decline for seafood retailers, wholesalers and restaurants

Declining seafood per capita consumption in Japan has translated into revenue decline at seafood retailers/wholesalers in their domestic markets of 1% on average – see Figure 17.

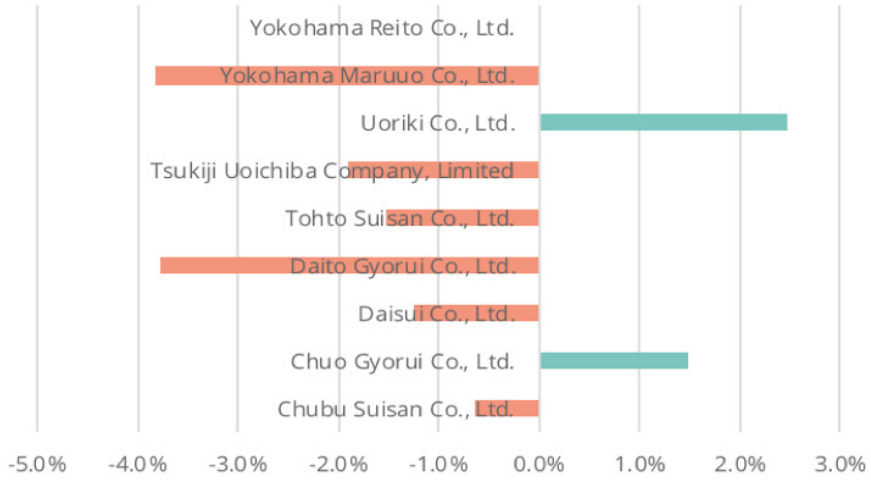


Figure 17: *Average Annual Growth Rate in Domestic Revenue of Japanese Seafood Retailers and Wholesalers (2010-19).*[73, XXIV]

Restaurants exposed to seafood experienced an even more pronounced revenue decline over the period (-1.7% p.a.), resulting in strong margin decline[74] – see Figure 18. In comparison, sales in the overall restaurant sector grew by 17% overall between 2011 and 2018 in Japan, a 2.3% average growth rate.[75]

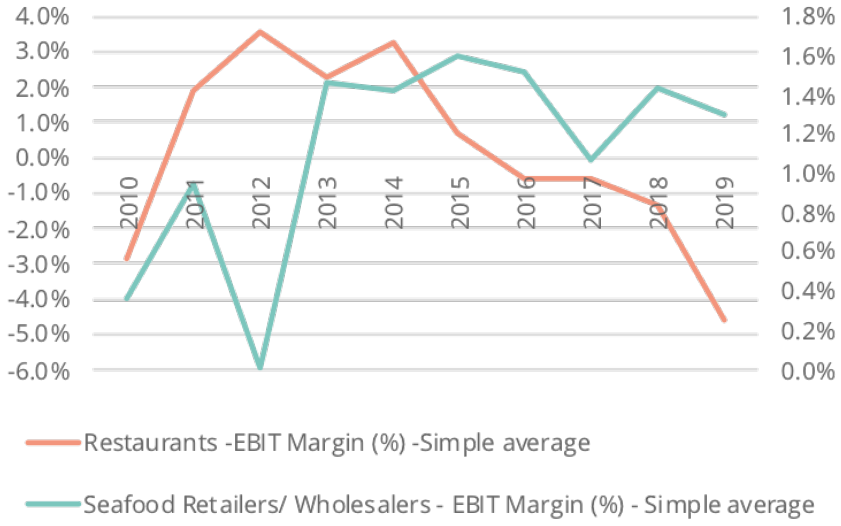


Figure 18: *Average EBIT Margin at Japanese Seafood Retailers (right hand scale) and Restaurants (left hand scale).*[76]

XXIV Revenue at Yokohama Reito Co., Ltd grew by an average of 0.0% over the period.

Investments that chase growth away from seafood cannot be self-financed at seafood retailers and wholesalers

The industry's capital expenditure (capex) has more than doubled as a percentage of sales between 2010 and 2019, potentially indicating that companies are looking for ways to rejuvenate revenue growth through investment. When analysing these investments, it becomes clear that the sub-sector is investing in other areas than seafood, including for instance in meat: meat imports were c. 40% higher in Japan in 2019 compared to 2009.[77]

For instance, Yokohama Reito (Yokorei) - the company in this sub-sector that saw the highest rise in capex as a percent of sales - has invested significantly in warehousing capacity, with refrigerated capacity up by 79% between 2000 and 2020.[78] Interestingly, seafood accounts for the minority of sales at Yokorei's refrigerated warehousing business: 13% in FY 2020, down from 18% in FY2017. The refrigerated warehousing business has grown faster than Yokorei's food sales business: it accounted for 25% of sales in FY2020, up from 18% in FY2013, and the vast majority of operating income.[79]

Analysis of cash flow generation shows that seafood retailers and wholesalers are not able to cover the costs of their investments through their operational cash flow alone.[80]

Whilst investing cash flow as a proportion of operational cash flow is similar across all subsectors, this ratio is much higher for seafood retailers and wholesalers, where investments in capital expenditures are higher than the operational cash flow they generate[81] – see Figures 19 and 20.

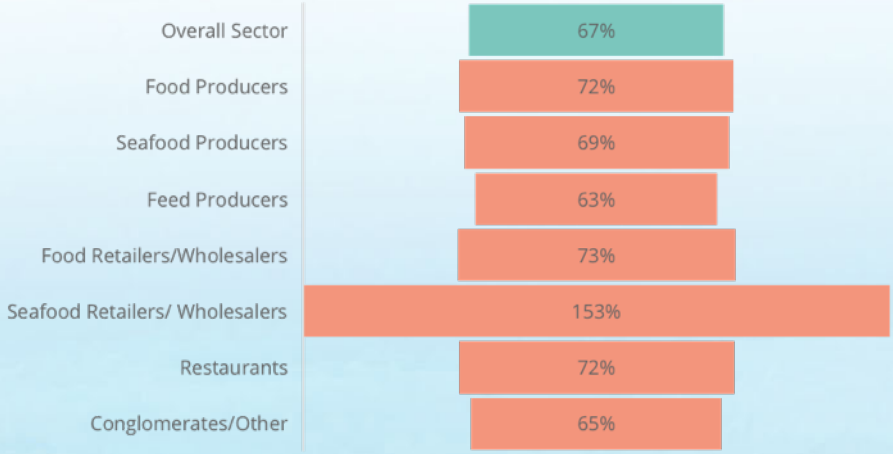


Figure 19: *Investing Cash Flow as a Percentage of Operational Cash Flow, 2010-19 cumulative.*[82]

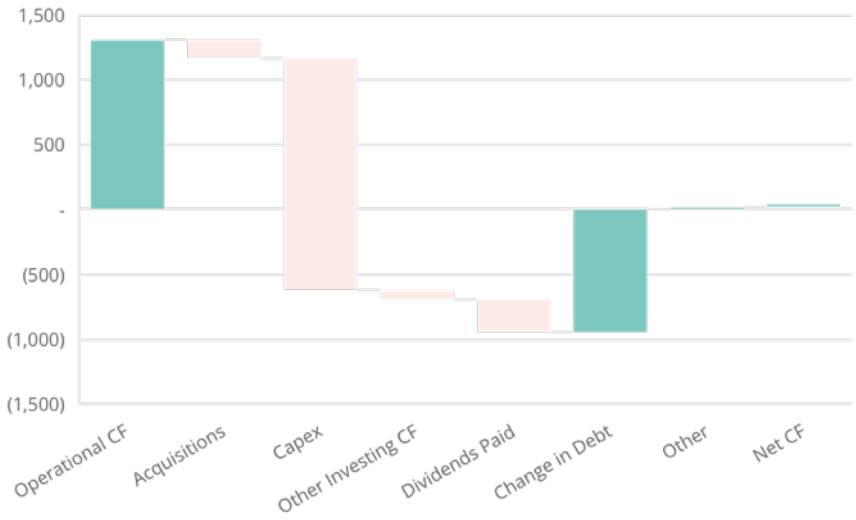


Figure 20: *Breakdown of Cumulative 2010-19 Cash Flow at Japanese Seafood Retailers and Wholesalers, in hundreds of JPY million.*[83]

In brief, seafood retailers and wholesalers that traditionally rely on the trade of seafood are actively investing outside of that declining resource but have to use debt to fund these investments.

Seafood retailers and wholesalers have de-rated against their peers

Seafood retailers and wholesalers are in an unenviable position: revenue in decline, profitability on a downward trend, combined with an inability to self-finance investments to chase growth. This perhaps explains why the P/E multiple of seafood retailers has compressed, whilst that of the more diversified food retailers expanded between 2010 and 2019 – see Figure 21.

Figure 21: *Median 12 months Forward P/E Multiple by Subsector.*[84]

The financials of seafood retailers and wholesalers (and also restaurants) have been impacted by declining seafood volumes, a function of multiple factors including lower fish stocks. This is a key example of natural capital affecting financial statements in a rather obvious way.

For seafood producers, similar impacts can be evidenced, although they are less obvious… for now.

SEAFOOD PRODUCERS MIGHT SUFFER NEXT

Seafood producers' domestic revenue growth defied falling seafood production/imports in Japan

In the context of revenue decline downstream – both at retailers and restaurants, positive revenue growth for seafood producers in their domestic markets (2% p.a. on average) is notable, especially considering that seafood production is declining.

However, acquisitions explain three quarters of that growth.[85] Restated to account for M&A, revenue growth would have been close to zero.[86] This is still higher than the decline seen by downstream companies and the decline seen in both seafood production volume and imports of seafood (-2% p.a. on average) over the period – see Figure 22.

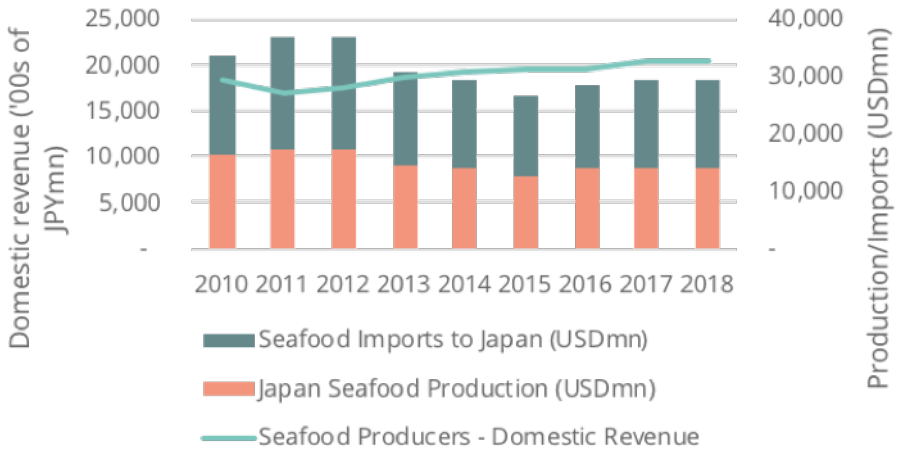


Figure 22: *Japan Seafood Production and Imports vs Revenue of Japanese Seafood Producers.*[87]

Note: 1 USD = 105 JPY as of 11/2020

Is seafood structurally less profitable than other food products in Japan?

Analysing gross margins of our Universe reveals one remarkable fact: seafood seems to be significantly less profitable than other food products. Indeed, food producers also exposed to seafood generate, on average, gross margins 12% pts higher than seafood producers. Equally, food retailers/wholesalers that also sell seafood generate gross margins 12% pts higher than specialised seafood retailers/wholesalers – see Figure 23.

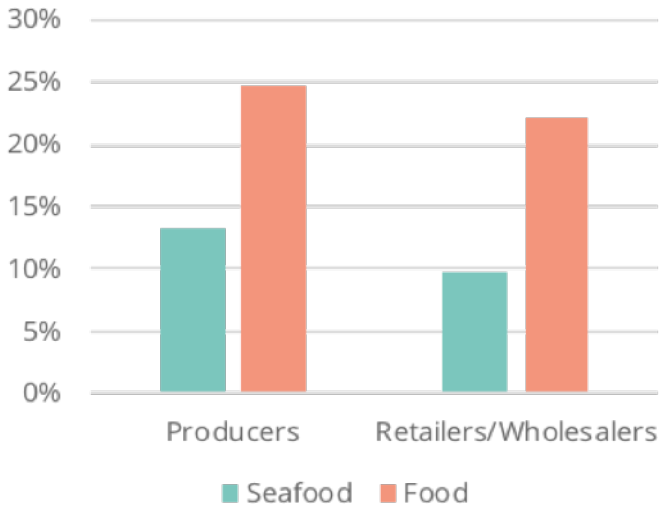


Figure 23: *2019 Gross Margin Comparison by Subsector.*[88]

That gap has remained relatively constant since 2010 for producers and is slightly widening for retailers and wholesalers.

Gross margins on a downward path for seafood producers, as seafood volumes and prices trend down

Between 2010 and 2019, gross margins in the Planet Tracker Universe have stayed stable on average (22.6% in 2019). By comparison, over the same period, gross margins of TOPIX100 companies have expanded by 250bps on average.[89]

For seafood producers, they declined over the period by 30bps. In addition to the decline in seafood production due to overfishing, it is likely that the significant decrease in the average producer price of seafood produced or imported in Japan is behind the downward trend for seafood producers' gross margins – see Figure 24.

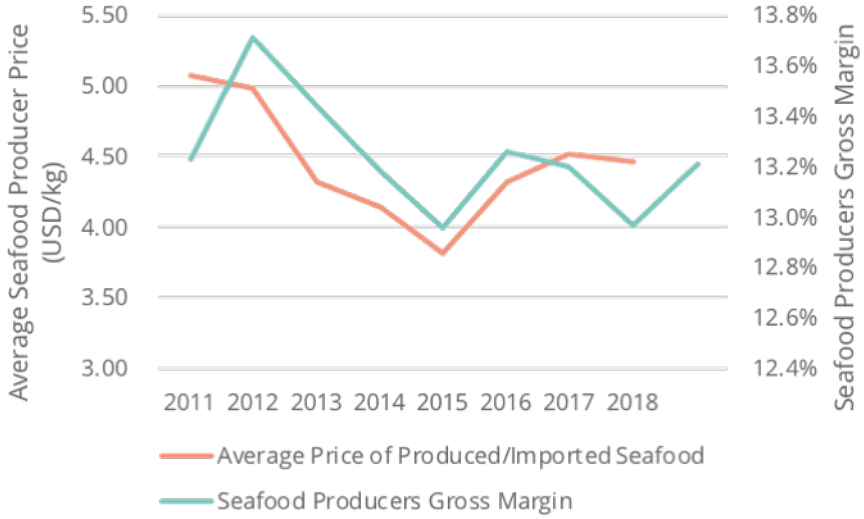


Figure 24: *Seafood Producers Gross Margin and Average Price of Seafood Produced or Imported in Japan.*[90]

For example, seafood producers frequently mentioned seafood prices as key factors of increased or decreased profitability in recent years – see Table 14.

Table 14: *Seafood Producers - Selected Comments on Seafood Prices.*[91]

Company	Year	Comment
Maruha Nichiro	2019	low skipjack prices; decline in market prices for crab and salmon
Nissui	2018	significant decrease in sales price in salmon/trout aquaculture; decline in tuna sales price
Maruha Nichiro	2018	falling prices of bluefin tuna and skipjack
Kyokuyo	2018	dramatic fall in farming fish prices
Maruha Nichiro	2016	soaring fish prices
Kyokuyo	2016	overall fish prices remained strong; fish prices higher in the overseas business

CASE STUDY:
MARGINS ARE DEPENDENT ON NATURAL CAPITAL AT NISSUI

Using Nissui again as an example of a company illustrating the trends at play among seafood producers, we note that its Marine Products division has the lowest margins of all, in every region of the world.[92]

Within the Marine Products division (in blue in Figure 25 below), aquaculture is the largest profit pool for Nissui, having contributed 54% of the division's profit in FY2019, with an operating margin of 11.9%.[93] Salmon aquaculture in Chile is the largest profit pool in that division. Wild-catch fishery and processing operations are significantly less profitable than aquaculture for Nissui, with operating margins of 3.3% and 1.5% respectively in FY2019.

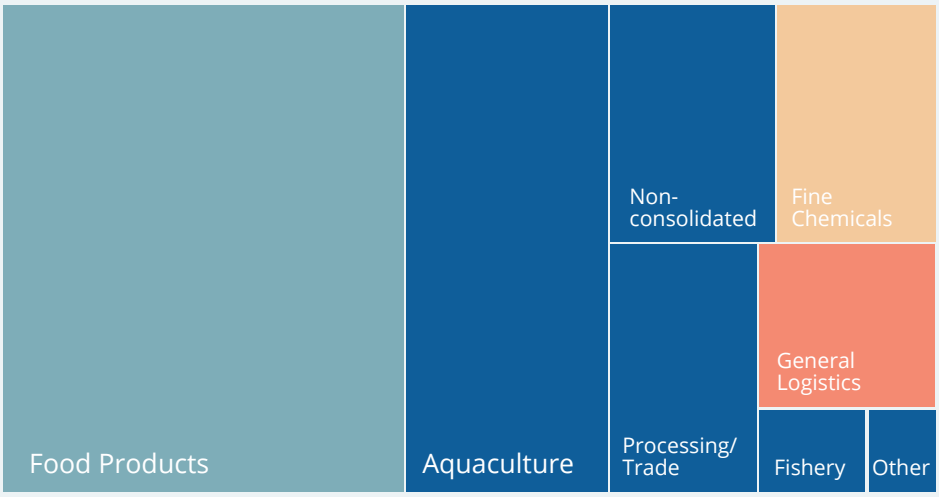


Figure 25: *Breakdown of Nissui FY 2019 Operating Profit by Business (with the Marine Products Division in Dark Blue).*[94]

The evolution of sales and margins in Nissui's upstream business are heavily dependent on natural capital. Consider for instance what the group reported, in parallel with the evolution of fishing and aquaculture sales and margins shown in Figure 26 below.[95]

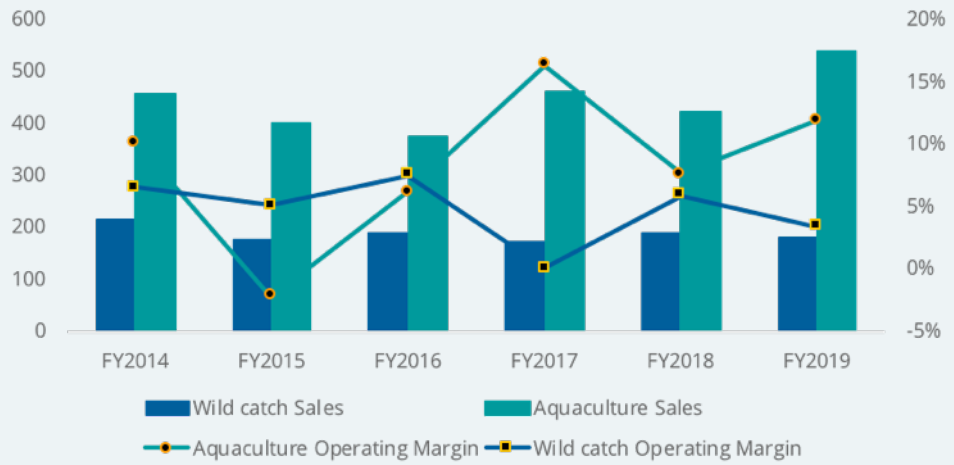


Figure 26: *Evolution of Wild-Catch and Aquaculture Sales (Unit: 100mn Yen, lhs) and Operating Margins (rhs) at Nissui.*[96]

- In FY2015, sales volume decreased due to weak catches of hoki and southern blue whiting in South America
- In FY2017, poor catches of mackerel and horse mackerel in Japan were the key reason why the wild-catch business made zero profit
- In FY2018, good catches of skipjack and mackerel in Japan led to an increase in wild-catch profit but an algal bloom weighed negatively on tuna aquaculture operations

In FY2019, both revenue and operating profit of the wild-catch business decreased due to the significant reduction in catch of mackerel and horse mackerel.

For seafood producers like Nissui, as seafood volumes and prices trend down, the implications for long-term profitability are clear: further pressure on fish stocks is likely to translate into further pressure on margins.

In addition, this downward trend in margins has negative implications for future cash generation, especially since cash conversion is relatively low.

Cash conversion at seafood producers is below average

Over the last decade, companies in our Universe turned 74% of their EBITDA into operating cash flow on average. This cash conversion ratio is in line with the average in Japan – as measured by TOPIX100 companies. It is highest for restaurants and lowest for seafood producers[XXV] – Figure 27.

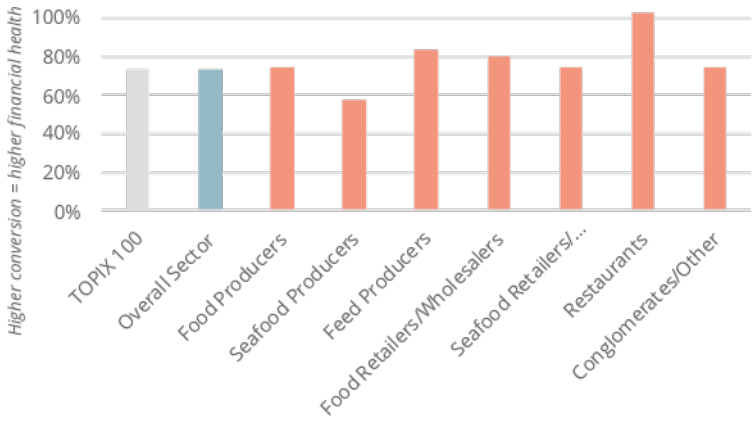


Figure 27: *Average Cash Conversion – 2010-19, based on Operating Cash Flow/ EBITDA.*[97]

Low cash conversion ratios at seafood producers are not the result of high working capital requirements but rather of recurring negative impacts on changes in operating cash flow that are included in 'other items'. These are typically share of profit/loss at associates or changes in the value of biological assets and are often linked to lower values of farmed fish held in ponds, for instance if fish prices decline or if mortality ratios increase. Companies the most affected are Yonkyu, Nissui and Ichimasa Kamaboko.

This particularity is yet another example of how changes in natural capital affect financials.

Seafood producers have made very long-term debt commitments

For companies in the Planet Tracker Universe, term loans with maturity in or beyond 2030 are by far the most common type of debt held. 89% of the sector's debt is not due before 2030 and only 5% matures before 2023 - see Figure 28. For the TOPIX 100, those proportions are 59% and 11% respectively.

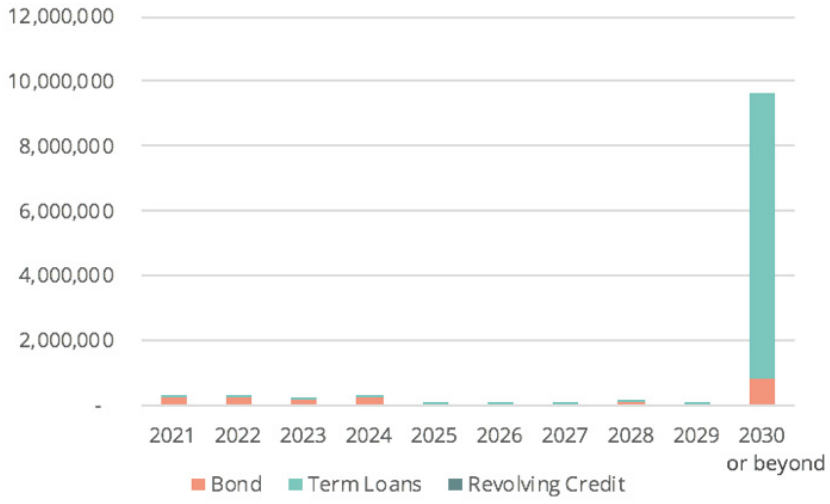


Figure 28: *Debt Schedule – Amount of Debt Outstanding (in JPY mn) by Type and Maturity.*[98]

XXV The higher the cash conversion is, the better, since rapid cash conversion shows low working capital requirements and better financial health.

This is especially true for seafood producers, seafood retailers/wholesalers and conglomerates – see Figure 29.

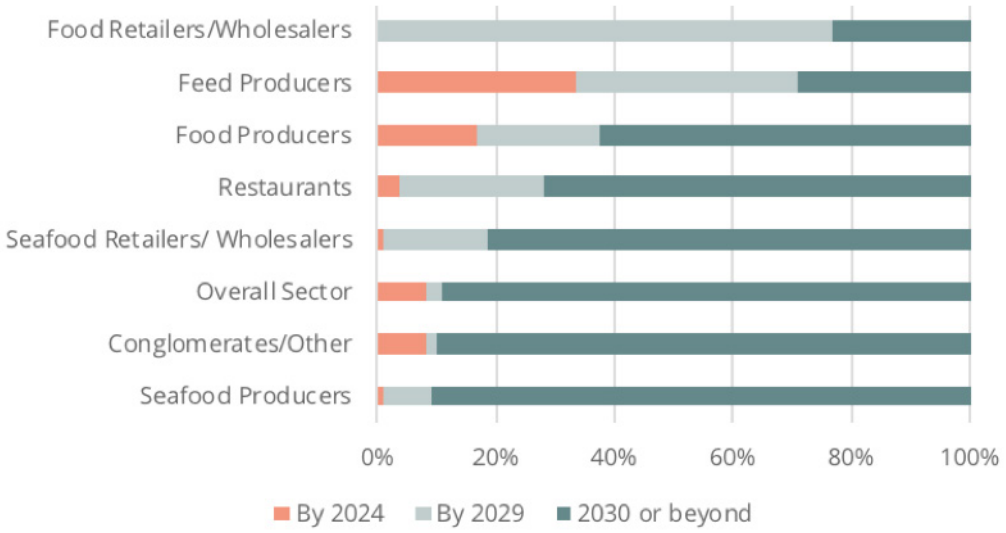


Figure 29: *Debt Schedule – Proportion of Debt Outstanding (in JPY mn) by Maturity and by Sub-sector.*[99]

On the other hand, more than half of the debt held by food retailers/wholesalers and feed producers matures before 2030.

Companies the most exposed to seafood have the longest debt maturities

This means that the two sectors with the highest exposure to seafood (seafood producers and seafood retailers/wholesalers) also have the highest exposure to (very) long-term debt.

These companies have made commitments to refund fixed amounts of money in the next decade and beyond, whilst visibility on fish production and therefore profit generation in 2030 and beyond is limited. We encourage debt investors to take note.

For instance, seafood producer Kyokuyo has JPY 30 billion in term loans that expire in or after 2030 as per data collected by FactSet and a net debt to EBITDA ratio of 9.1x based on 2019 numbers. In comparison, the company generated a cumulative negative free cash flow of JPY 20 billion between 2010 and 2019.[100]

Between 1995 and 2015, total seafood production in Japan (fish landings and aquaculture) fell by 43% in volume terms.[101] A similar or worse drop in seafood production in Japan over the next twenty years would force both seafood producers and seafood retailers/wholesalers to further increase their reliance on imported seafood to honour their commitments to lenders, unless profits per kg of fish can be significantly increased, so as to offset the drop in volume.

As shown earlier in Table 3, long-term forecasts for seafood production can be materially wrong. However, **because only 6% of global fish stocks are underfished, the risk of upside error to future wild-catch forecasts is likely to be low. On the contrary, the downside risk (collapse in several key fish stocks) is substantial, given that 34% of global fish stocks are overfished.**[102]

Companies highly exposed to seafood have de-rated compared to their less exposed peers

Potentially as a result of these seafood-specific negatives, we observe that the EV/EBIT[XXVI] multiple of seafood producers has come down by four notches of EBIT (from 18x to 14x) over the period while the multiple of food producers (less exposed to seafood) has expanded by four notches of EBIT - see Figure 30.

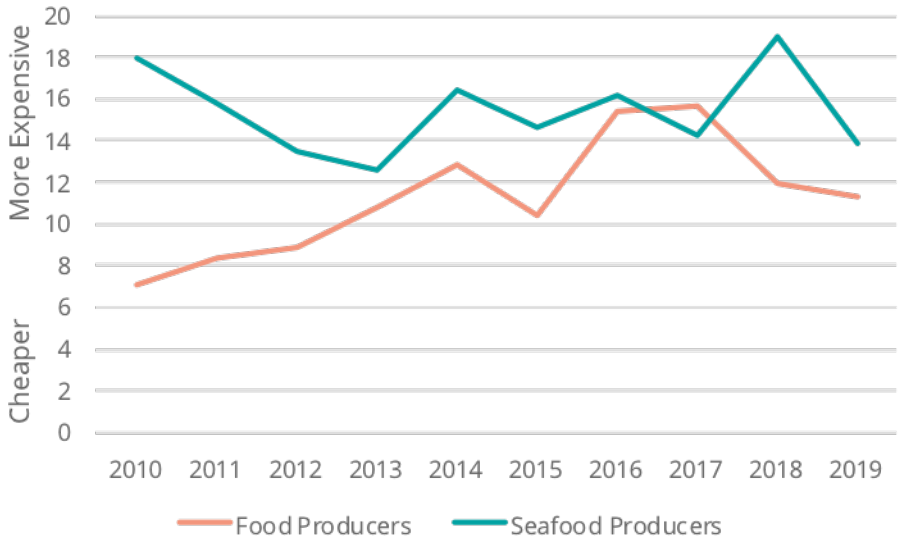


Figure 30: Median 12 Months Forward EV/EBIT Multiple by Subsector.[103]

Looking at EV/Sales[XXVII] multiples also shows that seafood producers trade at a discount to food producers (the same is true for seafood retailers, trading at a discount to food retailers).

It is difficult to pinpoint the diverging trajectories of these valuations to one or even multiple exact factors as these can be either company-specific or sector-specific.

What we can do though, is try to ***understand what key financial metrics investors look at when making investment decisions in the Japanese seafood sector, so as to determine whether these metrics could be grown in a way that does not ignore natural capital constraints***.

We believe this methodology could be replicated across other natural capital-dependent sectors in other large economies and encourage readers to use the conclusions of this report as a case study and a first step to comparable analysis in other industries.

XXVI Enterprise Value to Earnings Before Interest and Tax ratio, see Glossary
XXVII Enterprise Value to Sales ratio – see Glossary

RECOMMENDATIONS: THE JAPANESE SEAFOOD SECTOR CAN GROW IN LINE WITH NATURE

Exceeding natural capital's boundaries can result in lower revenue growth, margins, cash flows and ultimately valuations and ability to repay debt for companies exposed to seafood. Instead, strategies to grow along with natural capital constraints do exist:

- ***Disclose seafood volumes handled by species and origin***
- ***Commit to reducing overfishing***
- ***Develop closed-cycle aquaculture operations, sustainable feeds, plant-based seafood and lab-grown seafood, traceability solutions and certified products***
- ***Reduce bycatch, the environmental costs of aquaculture and food waste***
- ***Gradually retire and write-off bottom trawling fleets, freeze their footprint and not trawl MPAs***
- ***Remove ghost fishing gear***
- ***Implement independently verified sustainability policies in both English and Japanese, that inform corporate and M&A strategies***
- ***Consider participating in a blue bond scheme that would allow for a increasing their returns recovery in fish stocks based on a temporary catch reduction while inc***

The remainder of this report shows ways in which the Japanese seafood sector could simultaneously address some of the natural capital issues it has faced and/or caused and grow its financials. To assess whether this is possible though, an uncomfortable question first needs to be answered:

Is management up for further change?

In average, the management and board of companies in our Universe have been in place for 23 years, in line with the TOPIX 100 average. The average tenure at seafood producers (29 years) is however much longer than at restaurants (11) or food retailers (18) – see Figure 31.

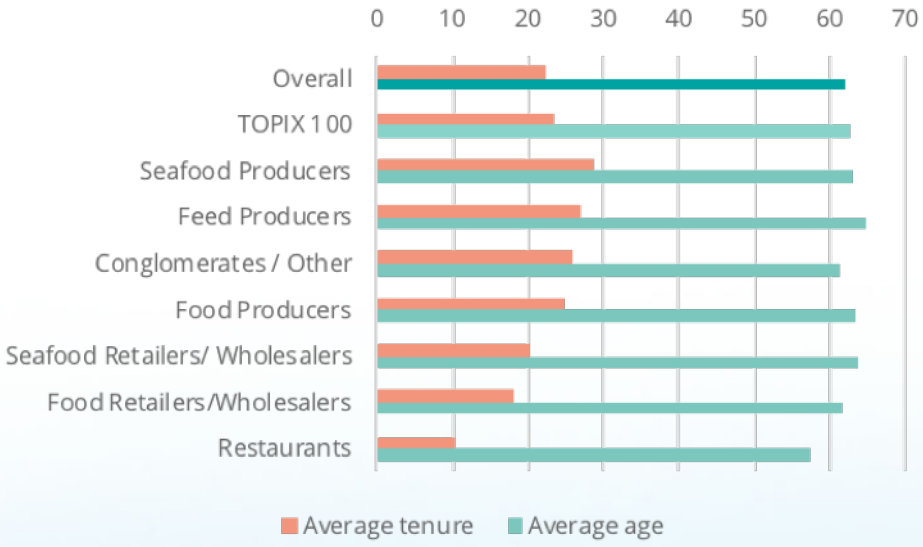


Figure 31: *Average of the Median Age of Management and Board and their Median Tenure (in Years).*[104]

We assume that long tenures are not necessarily an obstacle against change. However, we could be wrong.

Assuming that indeed management are up for further change, we now review which actions could be implemented and why they should be.

THE FIVE KEY DRIVERS OF SHARE PRICE PERFORMANCE

In a bid to find out how equity investors could help improve sustainability in the Japanese seafood sector, we have attempted to determine the drivers of share price performance for companies in our Universe, with a view to then researching how these could be improved in a way that is aligned with natural capital constraints.

To do so, we ranked companies by their share price performance over the 2010 to 2019 period [XXVIII] and compared key financial indicators of the top ten performers to those of the worst ten performers – see Appendix B: Financial Data.

We found out that the key drivers of share price performance within our Universe were:

1. growth in revenue
2. growth in EBIT margin
3. growth in operating cash flow
4. growth in returns on capital employed
5. expansion/compression in valuation multiples (whether P/E [XXIX] or EV/EBIT [XXX])

These indicators are typically much higher for the top ten performers than for the bottom ten. For instance, the median change in the EBIT margin of the ten companies whose share price grew the most over the period was +180 basis points (bps[XXXI]). The same number was -10bps for the ten worst performers.

This should not come as a surprise for most investors. However, we note that the absolute level of these indicators (i.e. the level of profitability or cash generation) does not correlate well with share price performance. Equally, change in gross margins, growth in free cash flow and change in capital structure do not correlate at all with share price performance – see Table 15.

Table 15: *Determining the Drivers of Share Price Performance (2010-19).*[105]

Driver	Importance to Share Price Performance	Indicator (2010-19)	Median - Top 10 Companies	Median -Bottom 10 Companies
Revenue growth	High	Revenue CAGR [XXXII]	3.5%	-1.6%
Growth in EBIT margin	High	Change in EBIT margin	+180bps	-10bps
Growth in operating cash flow	High	Operating Cash Flow CAGR	+7.7%	-4.8%
Multiple expansion/ compression	High	Change in EV/EBIT	+8.3x	-11.9x
Growth in returns	High	Change in ROCE [XXXIII]	+6.6%pts	-1.1%pts
Growth in EPS [XXXIV]	Low	Diluted EPS CAGR	+3.4%	-101.8%
Leverage (2010)	Low	2010 Debt/Equity ratio	109%	121%
Internationalisation	Low	Change in Proportion of Foreign Revenue	-3.6%pts	0.0%pts
Absolute level of returns	Low	2010 Return on Assets	1.2%	-1.0%
Sub-sector	Low	Sub-sector	n.a.	n.a.
Change in gross margin	Low	Change in Gross Margin	-300bps	-30bps
Growth in free cash flow	Low	Free Cash Flow CAGR	-4.2%	4.3%
Change in capital structure	Low	Change in Debt/Equity	-61%pts	-21%pts

XXVIII We ignored 2020 performance as it is likely to be significantly influenced by COVID-19
XXIX Price to Earnings ratio
XXX Enterprise Valuation to Earnings Before Interest and Tax ratio
XXXI 100 bps = 1%
XXXII CAGR – compound annual growth rate
XXXIII ROCE: Return on Capital Employed
XXXIV Earnings per Share – Whilst the fact that the median EPS growth is much higher for the best performers compared to the worst performers suggests that it is a key driver of share price performance, no correlation can be evidenced between EPS growth and share price performance in our two samples (top 10 and bottom 10).

Share price performance was rather homogeneous between sub-sectors, with two key exceptions: the average growth in the share price of seafood producers was significantly above that of other sectors, while that of seafood retailers/wholesalers was significantly below – see Figure 32.

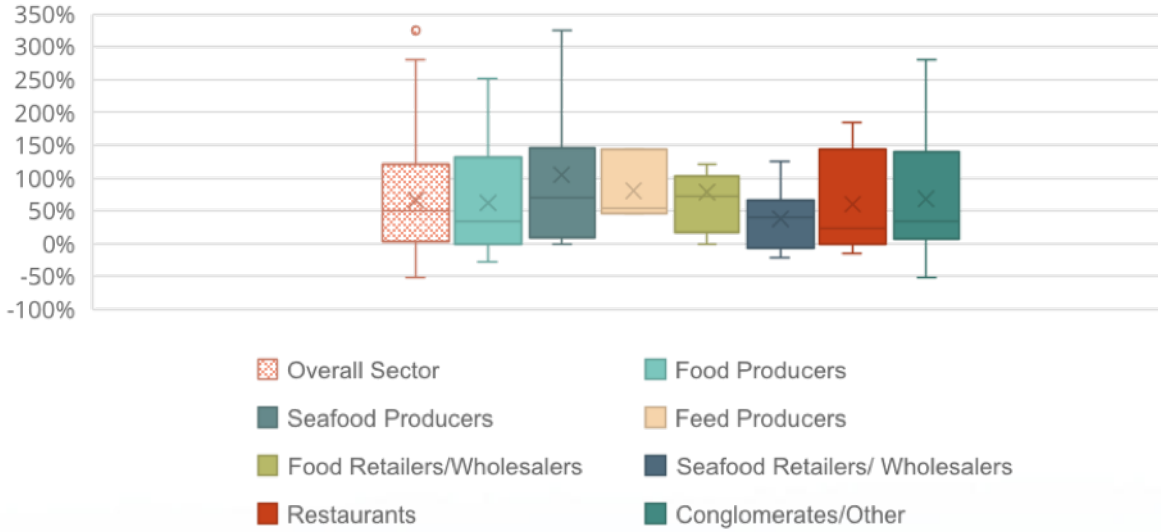


Figure 32: Distribution of 2010-2019 Share Price Changes by Sub-sector.[106]
Note: this chart displays the maximum and minimum values (whiskers), the upper/lower quartile (upper/lower end of the boxes), the median (line inside the box) and the average (cross). The dots for the 'Overall sector' box are outliers.

In the remainder of this report, we analyse how each of these five key drivers of share price performance (growth in revenue, EBIT margin, operating cash flow, returns on capital employed and expansion in valuation multiples) can contribute to sustainable growth in the future, i.e. growth aligned with natural capital constraints.

However, we warn investors that sticking to these key financial metrics might not represent the reality of the changes in natural capital on which these companies rely. To better reflect the true connection between natural capital and financials, disclosing volume metrics by species and location is essential - see page 87.

GROWING REVENUE SUSTAINABLY

Market consensus numbers[XXXV] imply that no revenue growth is forecast on average for companies in our Universe by 2021.[XXXVI] Conglomerates, restaurants and subsectors most exposed to seafood are all expected to see revenue decline between 2019 and 2021. Restaurants are expected to see the largest revenue fall[XXXVII] – see Figure 33.

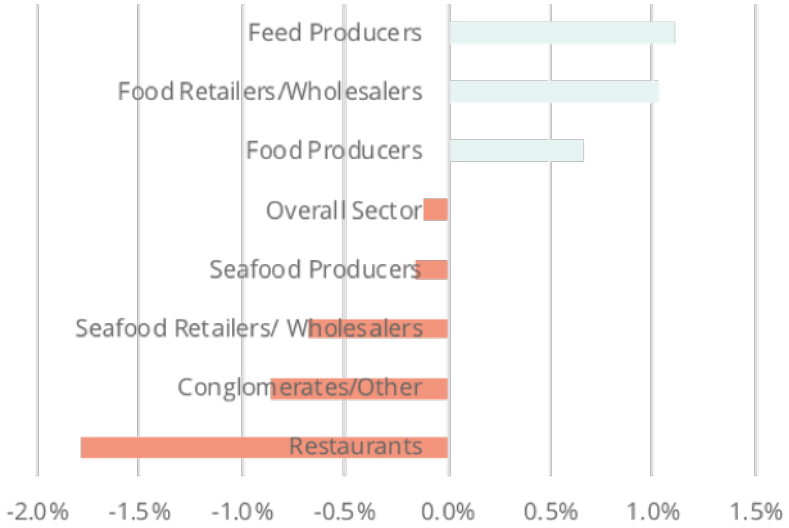


Figure 33: *2019-2021 Revenue CAGR Expected by the Market.*[107]

Yet in the medium term, we have identified multiple ways in which companies in the Planet Tracker Universe could grow revenue. We outline below strategies to grow with, rather than despite, natural capital constraint.

Build demand for certified products, leveraging vertically integrated supply chains

Multiple marine certification schemes that are aiming to encourage sustainable fishing and aquaculture have flourished globally in the last decade. In Japan, the two main certification schemes are the Marine Stewardship Council (MSC) and Marine Ecolabel Japan (MEL).

The uptake for certification initially encountered obstacles in Japan, such as:[108]

- Cost of certifying the whole supply chain: this is not an issue specific to Japan, but supply chains in Japan are particularly long, especially for restaurants
- Consumer preference: Japanese consumers have a preference for domestic products and are concerned about food safety and quality rather than sustainability according to several studies.[109]

XXXV A consensus estimate is a forecast of a public company's projected earnings based on the combined estimates of all equity analysts that cover the stock.
XXXVI There is not enough consensus data available to provide meaningful conclusions beyond 2021.
XXXVII Amid the ongoing COVID-19 crisis, expected revenue falls are probably steeper than shown, but we assumed 0% revenue growth for companies where consensus data was not available.

However, growth in the certified products market was strong over the last decade. Using MSC Japan as an example:

- the volume of MSC labeled products increased twentyfold from 2009/10 to 2019/20.[110]
- the volume of landing from the five fisheries certified by MSC in Japan is now around 10% of the total fisheries production.[111]

In addition, there are many fisheries with MEL certification.

Analysis of past and present applicants to certification schemes suggests that the main motivations to acquire a certification in Japan are: [112]

- Increasing domestic distribution channels
- Product awareness
- Demand from major retailers (e.g. Aeon and Japan Consumers' Co-operative Union- JCCU)[113]
- Branding (especially for export markets)[114]

Large vertically integrated seafood companies have both the ability and the incentive to increase their sourcing from certified fisheries or farms and therefore increase their exposure to that growing segment, given that they can:

- Consistently educate consumers about the benefits of sustainable seafood and listen to their feedback via downstream operations (retail) and market processed products
- Make economies of scale on the costs of certification given their vertically integrated structure
- Leverage their brand names and their perception as makers of safe and good quality products to use sustainability as a bonus element for consumers who primarily care about food safety and quality.

As an example, Nissui disclosed in a 2016 resource status survey that 37% of the wild-caught fish it used was caught by fisheries with certifications. Between FY2018 and FY2019, the volume of seafood products sold by Nissui certified by either MSC or ASC increased by 517%.[115]

Develop closed-cycle aquaculture operations

Compared to farmed production relying on ranching (when juvenile fish are captured in the wild and raised in captivity, as seen previously with southern bluefin tuna), closed-cycle aquaculture operations have the potential to be incrementally more sustainable, especially if their feeding requirements do not harm wild fish stocks. In closed-cycle systems, farmed fish are bred in captivity and separated from their environment, to ensure no pollution of surrounding ecosystems and no fish escape that could be detrimental to wild fish stocks.

The case study below discusses how the farming of bluefin tuna in Japan is on the way to becoming more sustainable and how it affects revenue growth.

CASE STUDY:
CLOSED-CYCLE AQUACULTURE OF BLUEFIN TUNA IN JAPAN

A particular fondness for bluefin tuna, especially in Japan, has triggered a crisis resulting in a dramatic reduction of wild populations, with Pacific bluefin stocks in 2016 at only 3% of their unfished level.[116] This has led multiple companies to start farming this threatened species.

In Japan, Maruha Nichiro and Nissui farm bluefin tuna at ten sites.[117] Kyokuyo is also making headway in the egg-to-harvest market for bluefin tuna, having started to supply Japanese retailers in 2017.[118]

In 2018, only 6.5% of the total farmed production of bluefin tuna – just under 4,000 tonnes – was through closed-cycle aquaculture, the rest being via ranching (i.e. the live capture and transport of juvenile tuna to pens).

In FY 2017, Maruha Nichiro sold around 66,000 bluefin, generating sales of JPY 900 million.[119] Of this, only 5,000 had been reared under closed-cycle aquaculture. The company is targeting sales of 78,000 bluefin in 2021, of which 15,000 will be from closed-cycle aquaculture.[120]

Compared to ranching, closed-cycle aquaculture is a growing market and constitutes an advance in sustainability because of the significantly lower impact on wild stocks.

Yet the issue of feeding remains, with 15kgs of feed (mostly sardines and mackerel) needed to produce every kg of bluefin. Some industry experts believe, however, that within ten years it will be possible to farm full life cycle tuna without the use of any marine products (fishmeal and fish oil), as can be done for salmon today.[121] In the meantime, the farming of bluefin tuna continues to put pressure on wild stocks, because it heavily relies on the capture of juvenile fish in the wild.

Develop plant-based seafood and lab-grown seafood

Plant-based seafood is a tiny market. In the US, its retail sales were USD 9.5 million in 2019, amounting to only 1% of plant-based meat, which itself amounts to 1% of meat sales. Total research and development expenses into plant-based seafood are also limited, at less than USD 20 million as of 2019.[122]

Yet key players are already positioning in the space:

- In August 2020, Nestlé launched a plant-based alternative to tuna, first available in Switzerland. The group plans to launch more similar products soon.[123]
- Tuna giant Bumble Bee launched a USD 40 million investment fund in June 2020 dedicated to develop plant-based seafoods.[124]
- In Japan, food wholesaler Nishimoto launched the world's first plant-based tuna in 2018, created by New York based company Ocean Hugger Foods[XXXVIII] and made from tomatoes.[125]
- A year later, a vegan alternative to sea urchin was created by a company called Fuji Oil.[126]
- In August 2020, Cargill launched two plant-based products in Japan, including vegan scallops, co-branded with, and sold at, Japanese convenience store chain Lawson.[127]
- Thai Union, a large, listed seafood producer, has announced it will launch plant-based "shrimp" in 2021.[128]

Whilst Japanese seafood companies are likely to be hesitant about potentially cannibalising their sales by making a foray into plant-based seafood, this market clearly offers strong revenue growth potential for all subsectors in our Universe. The key is to ensure that the plants used are sustainably sourced.

Lab-grown seafood is at an even earlier stage of development than plant-based seafood, but its potential is interesting from a sustainability perspective. For instance, California-based Finless Foods has developed lab-grown bluefin tuna, which is grown from a biopsy (the size of a grain of rice) taken on a bluefin tuna already slaughtered.

Whilst the resulting meat does not yet have the same texture as real bluefin tuna meat, it contains no mercury, does not affect wild populations, can be grown where it is consumed (thus saving transportation costs and the carbon footprint) and, compared to plant-based seafood, does not have land-use consequences.[129]

The main obstacles to the development of lab-grown fish are its cost and the perception of consumers. However, proponents of this burgeoning industry like BlueNalu – who recently grew yellowtail fish entirely from cells - argue that "[they] are not any more 'lab-made' than ketchup or Oreos".[130]

For now, most initiatives to grow fish in labs seem to be emerging in the US. Yet one of the companies in our Universe (Mitsubishi) has already agreed to partner with an Israeli company (Aleph Farms) to bring lab-grown meat to Japan. Mitsubishi said they want to examine the potential of the lab-grown meat market by becoming an insider in the industry.[131]
Could lab-grown fish be next on their list?

XXXVIII The company went bankrupt citing the COVID-19 crisis

Make innovations more sustainable: the example of sustainable feeds

According to Mintel's Global New Products Database, 317 new food products containing fish and fish products were launched in Japan between January 2015 and December 2019.[132] The growing number of launches over the last five years potentially indicates that innovation is on an accelerating trend in the Japanese seafood sector – see Figure 34.

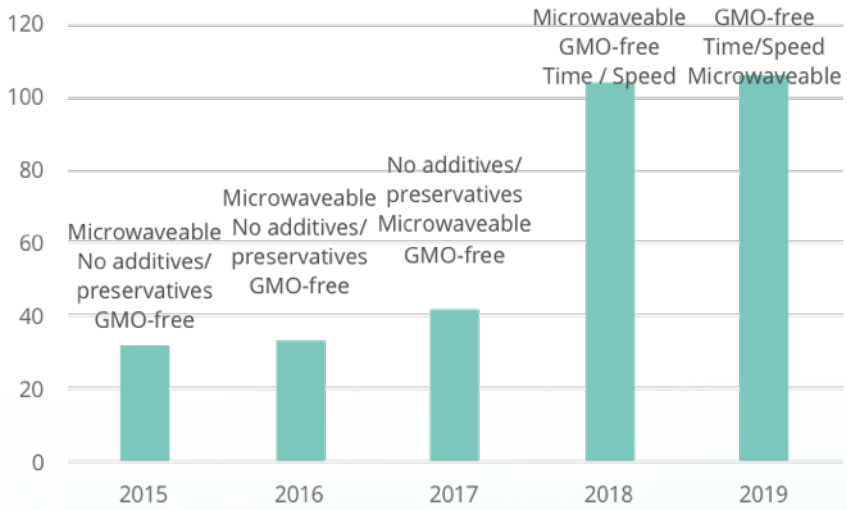


***Figure 34**: Number of New Seafood-Based Products Launched in Japan by Year and Top Three Claims.*[133]

However, whilst the most frequent claims of these new products include: "GMO free", "microwaveable", or "no additives/preservatives", emphasis on sustainability or certification is not one of them.[134] For innovations to be a driver of sustainable revenue growth, it is key that this is addressed.

Feed producers could also use sustainable feeds for aquaculture as a growth avenue – see case study below.

CASE STUDY:
COULD FEED PRODUCERS EXPAND INTO SUSTAINABLE AQUAFEEDS BY REFINANCING UPCOMING MATURING DEBT WITH GREEN BONDS?

Feed producers saw revenue growth of 0.8% p.a. on average despite no growth in domestic aquaculture production. Aquaculture is the key market for the seafood segment of these companies. 2011 was strongly impacted by the Tohoku earthquake and tsunami, but growth has not picked up since – see Figure 35.

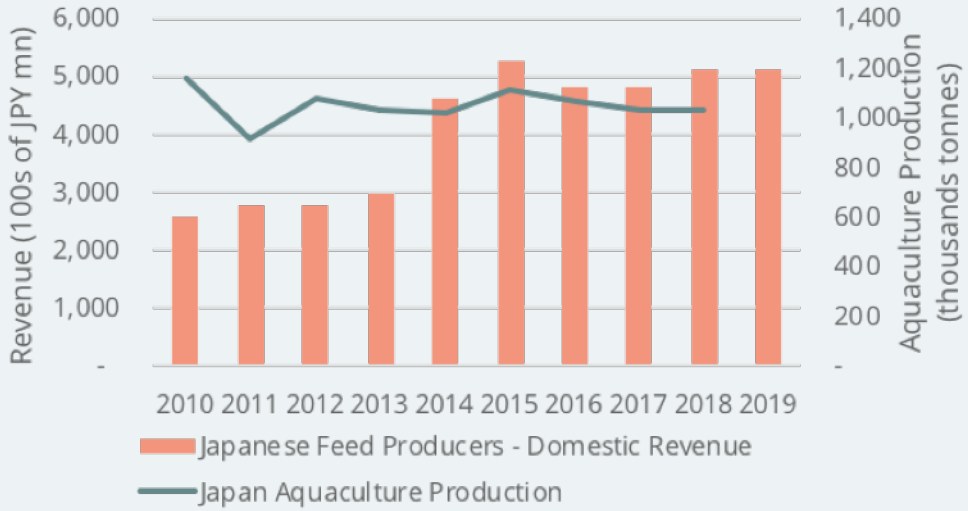


Figure 35: *Japan Aquaculture Production vs Domestic Revenue of Feed Producers.*[135]
Note: Feed One revenue only available from 2014, average revenue growth calculated without Feed One prior to 2014

This could indicate either:

- Higher spending on feeds per volume of fish produced by aquaculture companies (either higher use of feeds or higher price per kg of feed used)
- Market share gains (against other providers of aquafeeds)
- Revenue growth driven by other feeds than aquafeeds: aquafeeds account for less than half the sales of all three companies in this subsector

Looking ahead, revenue growth could be achieved by a foray into novel and sustainable aquafeeds. To the best of our knowledge, all three listed feed producers (Showa Sangyo, Feed One and Nichiwa Sangyo) use a combination of animal- and soybean-based feeds in their aquafeeds, but little information is provided on the sustainability of those feeds.[136] For instance: is the soybean used free of deforestation risk?

All of the debt of Showa Sangyo matures by 2025.[137] This provides the company with an opportunity to issue a green bond, the proceeds of which would help to ensure that the feeds used by the company are more sustainable.

This could be done either by ensuring that the soybeans used are not linked to deforestation, or by developing new feeds, such as blackfly larvae, single-cell proteins or canola oil. Planet Tracker explored these topics in more detail in Bonds for Ponds.[138]

Reduce bycatch

Bycatch is a fish or other marine species that is caught unintentionally while catching certain target species and target sizes of fish, crabs etc. Bycatch is either of a different species, the wrong sex, or is undersized or juvenile individuals of the target species. Global bycatch is estimated to amount to 40% of the world's catch.[139] Whilst the bycatch ratio is relatively low in Japan (13%),[140] Japanese seafood producers source globally and therefore have both a global impact and ability to reduce bycatch.

For instance, Kyokuyo supported research on devices to reduce bycatch of juvenile bigeye tuna.[141] Both Kyokuyo and Nissui provide information on bycatch, according to the World Benchmarking Alliance. We have not found any other example of an initiative, company policy or effort to mitigate the impact of bycatch at companies in our Universe. Yet bycatch can be reduced through the use of appropriate devices and technology - see case study below -eventually driving higher revenue at wild-catch businesses. Quantifying the impact of bycatch on companies' operations and implementing measures to reduce it is therefore a key way to drive both sustainability and profitability for seafood producers.

CASE STUDY:
REDUCING BYCATCH THROUGH TECHNOLOGY TO GENERATE HIGHER REVENUE

In October 2017, the 12th Conference of the Parties to the U.N. Convention on Migratory Species adopted a resolution to cut down on bycatch and improve data collection on species inadvertently captured. The resolution also asks donor countries to "consider helping developing countries acquire and use relevant technology, and with appropriate education and training" of fishermen.[142] Some examples of these technologies include:

- Certain hooks do not get stuck in the mouths of sea turtles, which reduces their risk of capture.[143]
- Acoustic pingers on fishing vessels have been shown to deter marine mammals and reduce their bycatch rates in the California drift gill net fishery.[144]
- Swordfish longline fisheries employ lights to attract fish, but they also attract leatherback turtles as well. Research on turtle light perception has shown that certain light frequencies are not visible to turtles but are still attractive to swordfish.[145]
- For crab pots, bycatch reduction devices are tiny plastic rings that are attached to the openings. These make the openings smaller so that blue crabs can still get in while keeping terrapins out.[146]
- Turtle excluder devices have led to a significant reduction in bycatch of turtles in shrimp trawlers.[147]

These technologies have the potential to generate significant improvement in sales: in the US for instance, it was estimated that bycatch totals 1 million tonnes a year, reducing the potential yield of fisheries by USD 427 million in ex-vessel revenues a year and by USD 4.2 billion a year in seafood-related sales.[148] Given that commercial fisheries' landings revenue was USD 5.3 billion in 2012 (the year the study on bycatch was made),[149] bycatch amounts to a 7% reduction on that fisheries revenue.

The positive effect on revenue generation of reduced bycatch will take time to materialise, especially if only a limited number of companies commit to acting. However, because Japanese seafood producers are leading their sector, their actions are likely to be imitated by other companies, in a positive race to the top, benefitting the entire industry's ability to generate revenue sustainably.

Remove ghost fishing gear

Derelict fishing gear, often called "ghost fishing gear," refers to any discarded, lost or abandoned fishing gear present in the marine environment.[150] Such gear continues to net or trap animals, entangle and even kill marine life, affect habitat and act as a hazard to marine navigation. These nets, lines and traps can take up to 600 years to decompose.[151]

In 2009, ghost fishing gear was estimated to account for at least 10% (640,000 tonnes) of all marine litter entering the ocean every year[152] and is estimated to have increased to c. 800,000 tonnes per year ten years later.[153] Those abandoned fishing lines and nets that do breakdown turn into smaller pieces of plastic. Marine animals mistake this microplastic for food and eat it, which can harm their internal organs, keep them from eating and expose them to toxic chemicals.[154]

Ghost nets make up at least 46% of the Great Pacific Garbage Patch, which itself is three times the size of France.[155, 156] Vessels fishing illegally are more likely to create ghost gear as they abandon gear to evade capture by authorities or to avoid being denied entry to port.[157]

Over 90% of species trapped in ghost gear are of commercial value,[158] thus creating "competition" to the c. 100 million tonnes of fish caught globally every year.[159]

The following examples quantify the impact of ghost fishing on some fisheries: [160]

- 4% to 5% loss of the commercial catches in the Baltic Sea
- 1.5% loss of the commercial monkfish catches in northern Spain
- 4.5% loss in the Dungeness crab fishery in Washington state
- 20% to 30% loss of the Greenland halibut catches in Norway

Whilst the economic impact of ghost fishing gear varies depending on the type of gear used and whilst no study has measured the exact impact of the 800,000 tonnes of ghost fishing gear lost every year on wild-catch volumes, such impact is likely to be significant.

For Nissui, for instance, conservatively assuming that ghost fishing results in a 1% loss on wild-catch revenue (based on the four examples above), the estimated annual impact would be at least JPY 200 million (USD 2 million) – excluding the impact of ghost fishing on the revenue of other companies from which Nissui sources its seafood. 93% of the fish procured by Nissui is caught in the wild.[161]

While removing ghost fishing gear can be costly, some studies suggest that it proves beneficial to do so. For instance:

- In the Salish sea (Pacific Ocean), just one abandoned net could kill almost USD 20,000 worth of Dungeness crab over 10 years, whilst the cost of removing that net is USD 1,358[162]
- In the Baltic Sea, a single lost gillnet can destroy USD 20,000 worth of seafood[163]
- Ghost fishing costs the UK's fishing sector USD 496,000 on average a year[164]
- In the Gulf of Oman, over 15,000 traps are lost every year, adding up to losses over USD 2.6 million[165]
- In Louisiana, crab fishers lose an average 250 traps annually, costing USD 4 million in profits a year on average[166]
- Abandoned or lost crab pots in the Chesapeake Bay area capture 1.25 million blue crabs annually[167]

According to both World Animal Protection and the World Benchmarking Alliance there is, however, limited evidence that companies significantly act to address this issue.[168, 169]

Yet if Japanese fishing companies adopted and implemented formal policies on ghost fishing, assessed its impact on revenue and profits and joined the Global Ghost Gear Initiative (GGGI), a global cross-sector initiative dedicated to address ghost fishing,[170] they could both improve their sustainability credentials and generate higher revenue.

The positive effect on revenue generation of reduced ghost fishing will take time to materialise, especially if only a limited number of companies commit to this. However, because Japanese seafood producers are leading their sector, their actions are likely to be imitated by other companies, in a positive race to the top, benefitting the entire industry's ability to generate revenue sustainably.

The good news is that some Japanese companies are on the way to reducing ghost fishing. By the end of 2021, the members of SeaBOS, which include Maruha Nichiro, Nissui, Kyokuyo and Cermaq (a subsidiary of Mitsubishi) in Japan, have committed to:

"Extend the collaboration with the Global Ghost Gear Initiative to solve the problem of lost and abandoned fishing gear; and combine to clean up plastics pollution from our coasts and waterways".[171]

Planet Tracker covered this in more details in "Back to School: Can the EU Learn from Others on Fishing Subsidies?".

To grow revenue in line with nature, Japanese seafood companies can therefore develop certified products, invest in closed-cycle aquaculture, plant-based or lab-grown seafood or ensure that innovations are sustainable. In addition, there are ways EBIT margins can be grown through improved sustainability.

GROWING EBIT MARGINS SUSTAINABLY

Consensus numbers show that the market expects gross margins to rise at food producers, seafood producers and conglomerates and fall at feed producers. [XXXIX, 172]

In particular, the market expects gross margins to expand by c.1% point for both Maruha Nichiro and Nissui by 2022 compared to 2019, more than offsetting the margin decline seen by seafood producers over the past decade. [XL, 173]

The market expects EBIT margins to rise slightly in all subsectors except restaurants, where a significant fall is forecast for 2020 (no data beyond 2020).[174]

How do companies expect to grow EBIT margins?

Strategies used by companies to grow margins vary. In addition, many of these strategies have been substantially modified or amended due to the COVID-19 crisis.

Comparing different companies' medium-term management plans reveals a mix of volume growth (in and outside Japan), cost optimisation and further vertical integration as key drivers of profit growth – see Table 16.

Table 16: *Comparison of a Selection of Medium-Term Management Plans.*[175, 176]

Company (Subsector)	Headline profit target	Drivers of profit growth
Maruha Nichiro (Seafood Producer)	At least a 10% CAGR in the operating profit of both its Marine Products and Processed businesses between the year ending 31/03/2018 and the year ending 31/03/2022	• Expansion of egg-to-harvest bluefin tuna farming and farming of other species • Increased domestic processing capabilities • Further value chain integration • Development of further value-adding products and brands • Reduction of production costs in the processing business.
Feed One (Feed Producer)	30bps improvement in operating margin between FY18 and FY20[XLI]	• Construction of a new factory • Development of branded products • Increase in number of sales representatives
Ichimasa Kamaboko (Seafood Producer)	50bps improvement in operating margin between FY18 and FY2021[XLI]	• Development of business structure to strengthen profitability • Expand profits in core businesses and realize competitive advantage • Strategic investment execution rooted in risk and return • Strengthening personnel and human resource development systems and promoting diversity • Progress of overseas strategy

What is missing, though, is a clear commitment to replenish fish stocks as the key way to grow long term profits. More generally, as the table shows, with one exception (expansion of closed-cycle aquaculture at Maruha Nichiro), increased sustainability is not mentioned as a profit driver.

XXXIX Not enough data available to draw conclusions for other subsectors
XL Consensus numbers are not available beyond 2020 for other seafood producers.
XLI Computed from absolute targets
XLII Computed from absolute targets

Planet Tracker proposes two alternative strategies that can both grow margins and improve sustainability, in addition to the revenue growth strategies presented earlier.

Implementing traceability

For seafood producers and especially their processing businesses, traceability is a very compelling way to improve sustainability (by allowing identification of the exact origin of a product and therefore reducing the share of IUU fish caught), but also to reduce costs and increase margins.

In Traceable Returns, Planet Tracker showed that implementing a traceability solution can double the EBIT margins of the typical seafood processor.[177] Fewer product recalls, lower product waste and a decline in legal costs mainly explain that three percentage points (%pts) margin gain.

This is an opportunity for Japanese seafood producers, who are not among the best ranked companies when it comes to traceability, despite some encouraging initiatives.[178] Below, the largest companies engaged in the processing of seafood globally are rated according to their traceability score (the higher the better)[179] – see Figure 36.

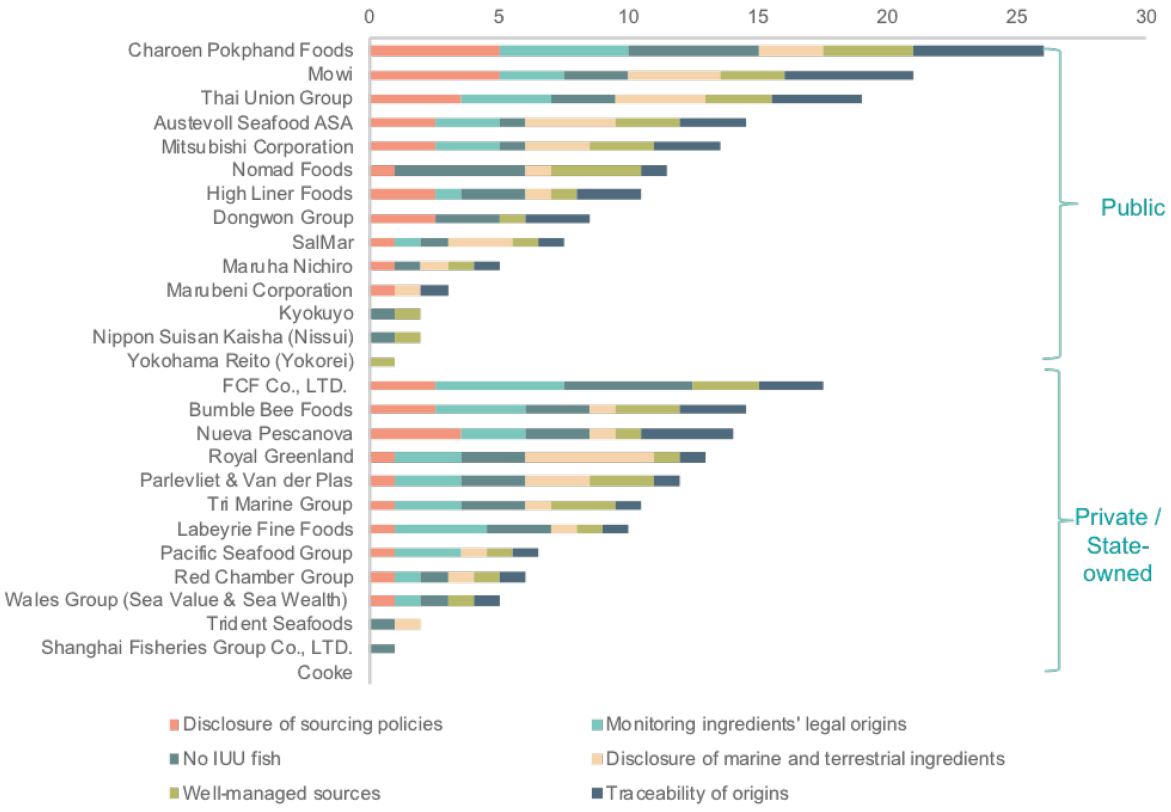


Figure 36: *Traceability Score by Company (the higher the better).*[180]

Wider adoption of traceability would allow to reduce IUU fish and fish from unsustainable sources in supply chains. For seafood retailers and restaurants, it could also be used as a marketing tool.

Quantification and reduction in aquaculture environmental costs

There are multiple ways in which aquaculture impacts the environment:

- *Chemical inputs:* excessive use of antibiotics, anti-foulants and pesticides, or the use of banned chemicals, can have unintended consequences for marine organisms and human health.
- *Nutrient pollution:* excess food and fish waste increase the levels of nutrients in the water and have the potential to lead to oxygen-deprived waters that stress aquatic life.
- *Biodiversity loss:* chemicals and excess nutrients from feed and faeces disturb the flora and fauna in the sea and on the ocean bottom.

All of these impacts have direct consequences for the natural capital on which companies rely and can also cause diseases that directly affect profitability at aquaculture farms.

Quantifying, disclosing and working towards the reduction of these environmental costs can be an effective way to improve profitability for conglomerates, seafood producers, feed producers and other companies in our Universe engaged in aquaculture.

GROWING OPERATING CASH FLOW SUSTAINABLY

Addressing food waste to optimise inventories

While investigating cash generation, we found that working capital rose faster than revenue across all subsectors between 2010 and 2019 - see Figure 37. This increase was purely driven by inventories – payables and receivables remained relatively stable as a proportion of revenue. This trend is not observed for companies in our benchmark (TOPIX 100).

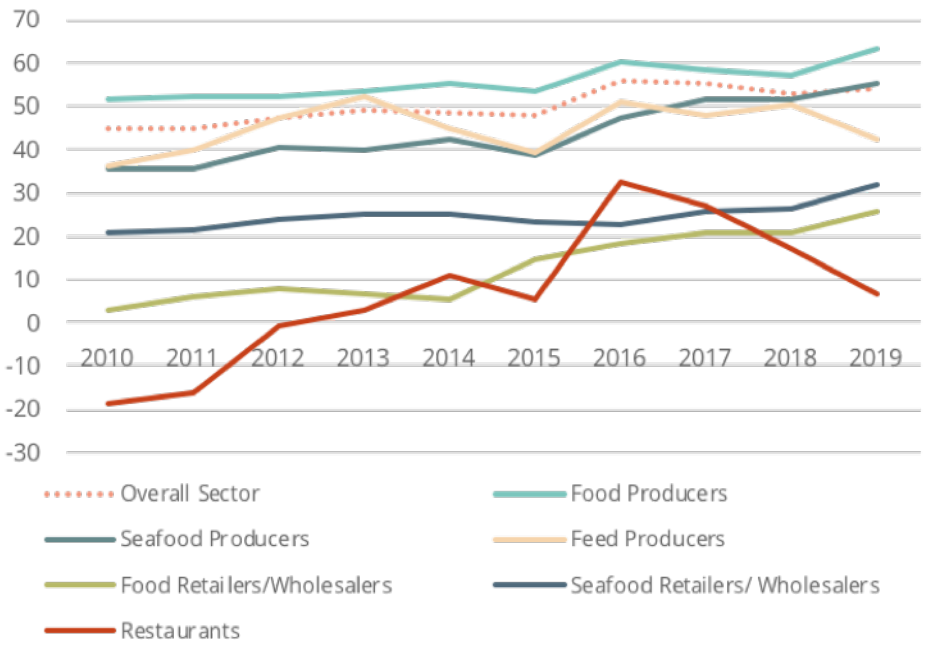


Figure 37: *Days of Working Capital by Subsector.*[181]

Inventories rose at restaurants, food producers and conglomerates in particular, and that increase translated into cash amounts worth respectively JPY 10 billion, JPY 54 billion and JPY 1,095 billion being tied up in inventories – see Table 17.

Table 17: *Days of Inventories by Subsector and Impact on Working Capital of Increased Inventories.*[182]

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Cash Impact (JPYmn)
Overall Sector	44	44	46	47	48	48	50	53	53	51	(889,812)
Food Producers	39	42	42	44	45	44	44	45	50	49	(54,358)
Seafood Producers	40	40	40	37	40	40	39	42	43	45	(38,192)
Feed Producers	49	41	53	49	40	38	36	38	46	44	6,887
Food Retailers / Wholesalers	20	20	20	22	22	24	25	26	26	28	(30,711)
Seafood Retailers / Wholesalers	17	19	15	16	16	15	16	20	19	16	1,088
Restaurants	34	30	39	47	52	52	55	70	72	58	(10,222)
Conglomerates / Other	97	95	102	102	107	108	122	118	108	107	(1,095,227)

This is a noticeable trend, likely to have worsened in 2020 given the oversupply challenges faced by many seafood companies due to the COVID-19 crisis, explored by Planet Tracker in Seafood Supply – What a Waste.[183]

While an increase in days of inventory in a specific part of the value chain or a specific company could suggest that products of that company or at that stage of the value chain struggle to be sold, the fact that such increase is seen across the whole value chain could be explained either by:

- The slightly higher growth of shelf-stable and frozen seafood relative to chilled or live fish[184]
- Rising food waste issues, although there is no proof for this (e.g. not enough data on inventory impairment to back that claim)

Whilst some companies like Maruha Nichiro or Nissui have implemented food waste reduction targets (see case study below), these are based off 2016 (FY2017) data and no historical data is provided.

CASE STUDY:
MOTTAINAI – EFFORTS TOWARD REDUCING FOOD WASTE IN JAPAN

The idea of not wanting something to go to waste — *mottainai* — is a concept deep-rooted since childhood in many Japanese people. And yet Japan is estimated to have an annual food loss of six million tonnes or more,[185] including several thousands of tonnes of seafood at the Toyosu wholesale fish market alone.[186] The commercial distribution practice known as the "one-third rule" is a key contributing factor to that issue. Under this rule, food makers or wholesalers should deliver products to retailers within the first third of the period that runs from the production date to the final sell-by date. If they cannot meet that deadline, the retailers have a right to refuse the deliveries, to ensure that consumers receive consistent quality for food products. The time constraints are much tighter than in other countries, resulting in food makers and wholesalers throwing out a huge amount of food with no quality issues. A commission has been set up with the assistance of the Ministry of Agriculture, Forestry and Fisheries to reconsider the commercial practices of food makers and wholesalers.

In addition, the Act on Promoting Food Loss and Waste Reduction (Food Loss and Waste Act) was promulgated in May 2019 (enacted in October 2019). This law defines reduction of food loss as a social measure for preventing still-edible foods from being discarded.[187]

Initiatives to reduce seafood waste include Mottanai Action.[188] This project opens upscale bars in affluent districts that rely on unwanted seafood produce, showing that the products used are not cheap. Unwanted seafood also ends up at the rising number of food banks (77 across Japan as of 2017, a sixfold increase since 2008).[189]

Picking just two companies in our Universe, Maruha Nichiro and Nissui respectively aim for a 4% and 6% reduction in food waste per unit of sales by fiscal year (FY) 2021 compared to FY2017, with the latter also targeting a 10% reduction by 2030.[190] For instance, all tinned food products excluding private-brand items manufactured by Nissui from July 1, 2019 are labelled with best-before periods expressed in year/month as opposed to year/month/day.

GROWING RETURNS SUSTAINABLY

Returns have worsened since 2015

Another key driver of share price performance, return on capital employed (ROCE), rose steadily across the first part of the last decade, before falling since 2015 (except for feed producers, who have consistently grown returns). This is despite the reduced level of debt, which normally favourably affects capital employed - see Figure 38.

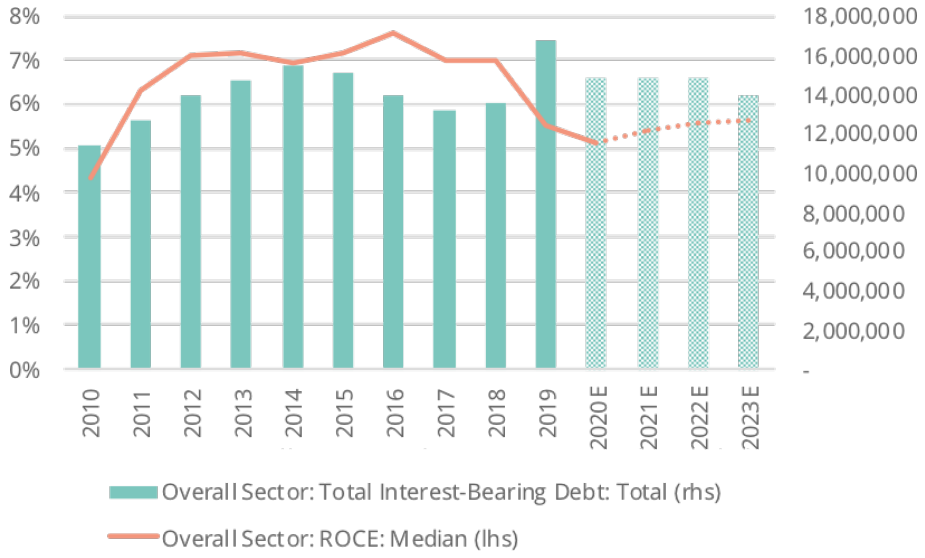


Figure 38: *Total Interest-Bearing Debt (in JPYmn, right axis) and Median Return on Capital Employed (ROCE, in %, left axis).*[191]

Overfishing led to a transition to aquaculture which is more capital intensive

Analysing the location of assets, we calculate that 75% of the JPY 8.4 trillion (USD 77 billion) spent in capital expenditure was made outside of Japan between 2010 and 2019.

This means that the proportion of assets held outside of Japan rose from 6% in 2010 to 10% in 2019 on average. The increase is especially noticeable for seafood producers, food producers and food retailers/wholesalers - see Figure 39.

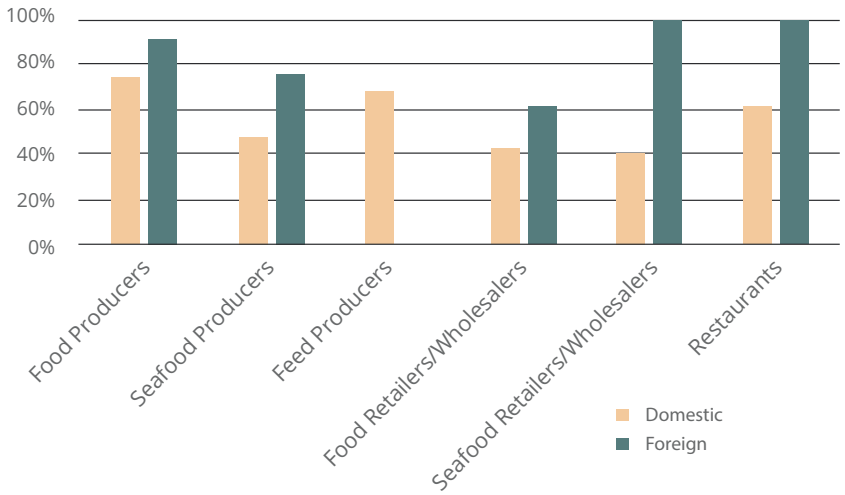


Figure 39: *Japanese Companies Exposed to Seafood – Proportion of Foreign Assets.*[192]

Foreign operations tend to be more asset-intensive (i.e. have a higher operating asset over sales ratio) than Japanese operations - see Figure 40.

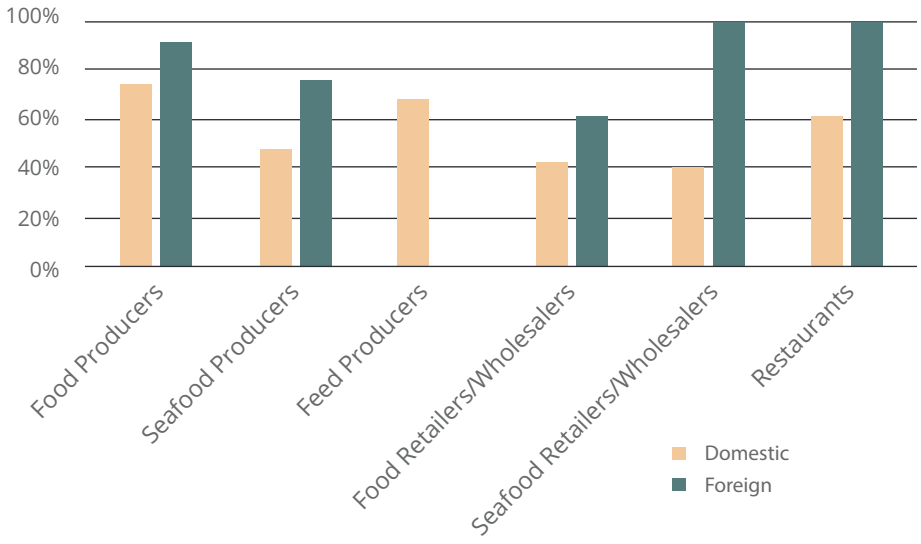


***Figure 40**: 2019 Assets to Sales Ratio by Sub-sector and Geography.*[193]
Note: not enough data on foreign assets for feed producers and seafood retailers/wholesalers. Conglomerates are not displayed since their operations in and outside Japan are often not comparable at all.

We see two potential explanations for this:

1. Foreign assets (such as processing facilities or aquaculture farms) are potentially newer than Japanese ones (investments were made more recently) and therefore possibly not used to their full capacity yet.
2. For seafood producers specifically, aquaculture operations (e.g. in salmon) are typically outside of Japan. They are more capital intensive than wild-catch operations.

Because overfishing resulted in lower wild-catch volumes, it kickstarted a transition to aquaculture, which is more capital intensive and therefore requires higher profitability to achieve similar returns. But what if there was a way to reduce capital requirements, increase returns and help replenish fish stocks, i.e. fix the core issue?

Blue bonds can help trigger a recovery in fish stocks and generate higher returns for seafood producers

For commercial fishing companies, reduced wild-catch translates into lower profit in the short term. While many companies might agree that replenishing fish stocks is the way forward, few of them are likely to be able or willing to bear the short-term financial consequences of such voluntary transition.

So, could investors provide a solution by investing in a blue bond? Planet Tracker proposed the following model in Can Blue Bonds Finance a Stock Recovery? : [194]

1. Fishing companies could accept a voluntary decrease in the quantity of fish caught for a set period of time
2. EBIT and free cash flow (FCF) at these companies would decrease, but the difference would be financed by investors (via an intermediary), provided that fishing companies demonstrate they are fishing at the agreed reduced capacity
3. When there is sufficient evidence that stocks are recovering, companies can fish at a higher level again (but no more than the maximum sustainable yield of each stock) and investors cease payments
4. Fishing companies then repay investors some of the cash invested in the form of a coupon computed as a function of the wild-catch volumes, until the bond's maturity
5. If fish stocks are not deemed to be sustainable, investors have lost their money. If fishing companies fish more than they are allowed to, they have to refund the cash received.

This model would ensure that the interests of fishing companies and investors are aligned with a recovery in fish stocks and the necessary temporary reduction in fishing.

The barriers to success of such a blue bond are considerable: finding the right bond issuer who would accept to underwrite it; agreeing on quotas for the species and the areas the blue bond covers, monitoring compliance with the rules and regulation; limiting the impact on the rest of the seafood chain and on employment, just to name just a few.[195]

Yet in our modelling, we computed that such a bond would generate an internal rate of return (IRR) of 26% for investors and 57% for fishing companies, assuming a reduction in catch every year for five years, a maturity of 25 years and a coupon of USD 50 per tonne of fish caught by fishing companies paid to investors – about 3% of the global average seafood producer price.[196] These are before costs of monitoring, implementation and transaction, which can be high, but depend on the scope and practical details of the blue bond.

For Japanese seafood producers and other companies in the Planet Tracker Universe with a wild-catch fishing business, **implementing such a tool would be a breakthrough in many ways since:**

- **It would address overfishing, the key issue that impacts natural capital and financials**
- **It would allow Japanese seafood producers to lead all of their peers globally** in terms of sustainability since they would be the first large seafood companies to voluntarily agree to catch less fish to improve fish stocks
- **It would drastically improve their returns**: seafood producers generated a median ROCE of 6.7% in 2019.[197] If the same return was generated every year for 25 years (the maturity of the bond in our modelling), the equivalent IRR would be 4%, vs 57% for the blue bond (before transaction and monitoring costs).

Another consequence of the reduced fishing effort linked to that theoretical blue bond is that fishing fleets in Japan would likely be smaller in the short term (declining faster than they have been so far), helping reduce capital employed.

Yet even without a blue bond – which is hard to implement - the benefits of reduced capital employed and increased sustainably can be achieved through a reduction in the size of fishing fleets.

Towards an asset-light seafood industry: gradual retirement of bottom trawlers

For seafood producers and other companies that own a fishing fleet, optimisation of that fleet could be a way to sustainably decrease asset intensity.

In particular, the gradual retirement (write-off and sale for scrap) of fishing fleets that operate in overfished areas or that have a particularly high impact on the natural environment could be considered.

Bottom trawlers, for instance, would be good candidates for gradual retirement.

Trawling is a method of fishing that involves pulling a fishing net (a trawl) through the water behind one or more boats. Trawling can be divided into:

- Bottom trawling: towing the trawl along or close to the sea floor
- Midwater trawling (also called pelagic trawling): towing the trawl through free water above the bottom of the ocean or benthic zone[XLIII]

Bottom trawlers land around 19 million tonnes of fish and invertebrates annually, almost one-quarter of wild marine landings.[198] Trawling footprint varies significantly among regions: from <10% of seabed area in Australian and New Zealand waters, the Aleutian Islands, East Bering Sea, South Chile and Gulf of Alaska to >50% in some European seas[199] – see Figure 41.

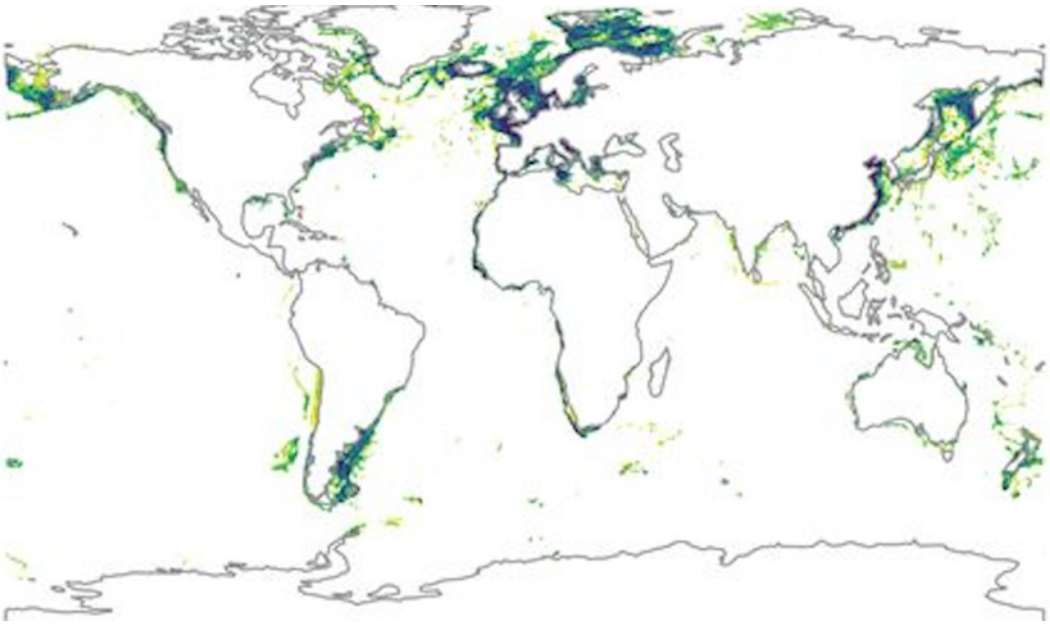


Figure 41: *Global Overview of Trawling Effort.*[200]

XLIII The **benthic zone** is the ecological region at the lowest level of a body of water such as an ocean, lake or stream, including the sediment surface and some sub-surface layers.

Environmental impact of bottom trawling

Deep-sea fish species targeted by bottom trawling are often characterized by longevity, low fecundity and slow growth making them particularly vulnerable to overfishing. In addition, bottom trawling is known to remove vast amounts of non-target species, including habitat forming deep-sea corals and sponges.

The primary sources of impact are the doors of the trawl, which can weigh several tonnes and create furrows if dragged along the bottom and the footrope configuration, which usually remains in contact with the bottom across the entire lower edge of the net.

Depending on the configuration, the footrope may turn over large rocks or boulders, possibly dragging them along with the net, disturb or damage organisms or rework and re-suspend bottom sediments[201] – see Figure 42.

It has been argued that the practice is responsible **for up to half of all discarded fish and marine life worldwide**.[202]

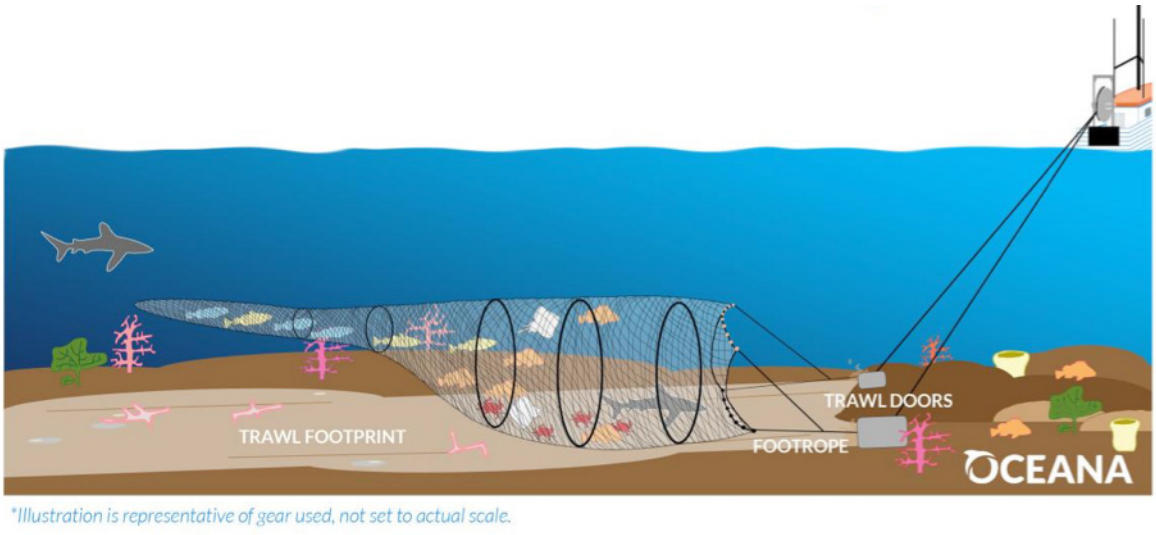


Figure 42: *How Bottom Trawling Impacts the Seabed*[203]

Bottom trawling and Japanese fishing companies

Through its negative impact on natural capital, bottom trawling impacts fishing companies in three different ways:

1. **Bans / Restrictions:** Because bottom trawling poses a serious risk to deep-sea ecosystems, it has been banned in multiple places such as in areas of the Mediterranean, Indonesia or the US West Coast.[204]

   In the US, for instance, bottom trawling is restricted since 1 January 2020 in over 90% of the seafloor along the coast from Canada to Mexico – one of the largest contiguous areas protected from bottom trawling in the world.[205] In 2006, a worldwide ban on bottom trawling in international waters was discussed at the UN but was eventually blocked by a few fishing nations, including Iceland, Russia, China and South Korea.[206]

2. Even though it is far from being likely, the impacts that a potential wide-ranging ban on bottom trawling would have on fishing companies is significant with **indirect impact on future wild-catch sales**. Because bottom trawling can destroy habitats that provide shelter, food and breeding grounds for fish and other species, its impact reverberates on species other than those targeted. In areas with high trawling intensity (measured by the area swept by trawlers per year), relative fishing mortality is higher[207] – see Figure 43.[XLIV]

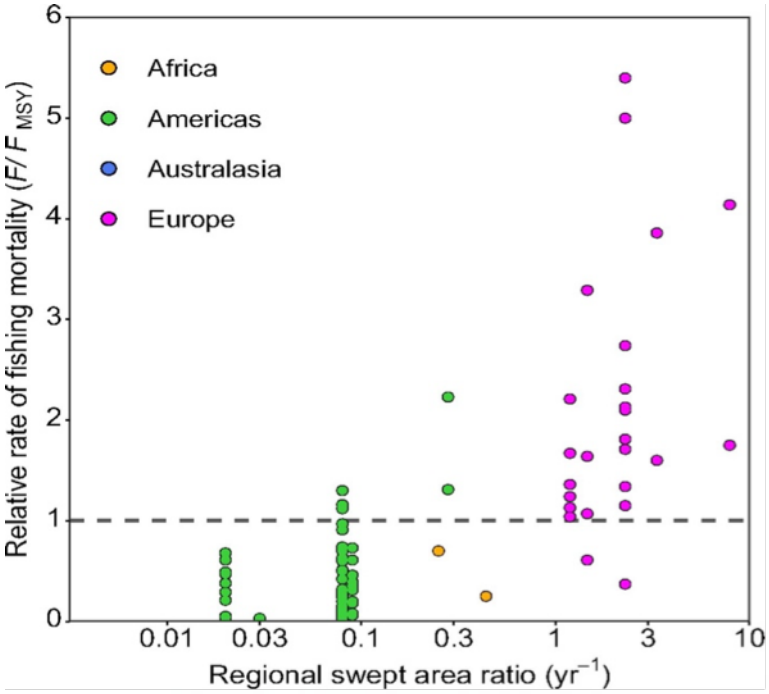


Figure 43: *Fishing Mortality and Trawling Intensity.*[XLV, 208]

While it is difficult to quantify the impact on wild-catch sales of companies like Kyokuyo or Nissui, it is very likely to be negative.

3. **Impact on aquaculture operations:** Oyster reefs have been decimated in many places by trawling.[209] Without these important filter feeders, coastal waters can suffer from eutrophication – when there are too many nutrients in the water. This in turn causes harmful algal blooms that can cause widespread die-offs of marine life and negatively impacts aquaculture farms.[210] In 2016 for instance, an algal bloom in Chile caused the worst case of mass mortality of fish and shellfish recorded in the coastal waters of western Patagonia. This die-off reduced Chilean salmon production by 12% and caused USD 800 million in economic losses.[211]

XLIV Note: the paper referenced here mentions that in all Australasian regions, three-quarters of the seabed is never trawled or is trawled less than once every 10 years, explaining why blue dots do not appear on the figure.

XLV F/FMSY stands for actual fishing mortality relative to fishing mortality at maximum sustainable yield

How to retire bottom trawlers

One gradual way for seafood companies to retire bottom trawlers could be to:

- **freeze their existing footprint**: i.e. only trawl areas where the seabed is already impacted
- **refrain from trawling in Marine Protected Areas (MPAs)**: in Europe for instance bottom trawling happens in 60% of MPAs[212]
- **write-off, decommission and sell for scrap the unused vessels** (to ensure they are not used by others)

Whilst the write-off would create a negative one-off impact to net profits, it would help reduce tax liabilities, bring cash when the vessels are sold for scrap (they should not be sold to other fishing companies) and optimise capital employed.

For seafood producers, freezing their bottom trawling footprint and gradually retiring their bottom trawling fleet could improve their capital employed. Freezing the footprint is currently used as a management framework in deep-sea fisheries in EU Regulation (EU) 2016/2336. It is also in place in some RFMOs for high-seas fisheries, for instance in the North East Atlantic Fisheries Commission (NEAFC) where the footprint is defined and limited to the "2014 existing fishing area" only.[213]

For species of finfish where alternatives to bottom trawling exist (e.g. midwater trawling or gillnets), such a strategy would make commercial sense. It is less the case for the bottom trawling of shrimp.[214]

Importantly, the first step towards such a strategic decision should be the **disclosure of the proportion of sales that comes from bottom trawling**.

For Nissui for instance, we estimate that bottom trawling accounts for 5% to 10% of the wild-caught fish handled by the group, depending on the proportion of "miscellaneous demersal fish" (those living close to the sea floor) caught via bottom trawling – see Table 18.

Table 18: *Estimating Fish Volumes Coming from Bottom Trawling at Nissui.*[215]

Species	Demersal/Pelagic	% of 2016 procurement by Nissui
Cod, hake, haddock	Pelagic	52%
Herrings, sardines, anchovies	Pelagic	18%
Misc. pelagic fish	Pelagic	7%
Misc. demersal fish	Demersal	5%
Salmon, trout, smelts	Pelagic	3%
Flounders, halibut, soles	Demersal	2%
Squid, cuttlefish	Demersal	2%
Tuna, bonitos, billfish	Pelagic	2%
Misc. coastal fish	Both	2%
Shrimps, prawns	Demersal	1%
Other	Both	5%
Total Demersal Species		**10%**
Total Bottom Trawling (estimated)		**5% to 10%**

Turning to Maruha Nichiro and scanning through the vessel list of Taiyo A&F, the group's largest fishing subsidiary with sales of JPY 35 billion, we find that at least 5 of the 33 vessels owned by that company are bottom trawlers: Yamaguchi Maru 1, 2, 3 and 5 and Nikko Maru No 1[216, 217] - see Figure 44 .

***Figure 44**: Bottom Trawlers Yamaguchi Maru No 1 and No 3 belong to Maruha Nichiro.*[218]

The four Yamaguchi Maru trawlers are pair trawlers, operating one trawl in tandem to catch sea-bream, anglers, blackthroat seaperch, cuttlefish and flat fish on the western side of the Japan Sea off Shimonoseki.[219]

Catch per vessel via pair trawling often exceeds that obtained through standard bottom trawling.[220] Due to the high level of bycatch associated with pair trawling it has, for example, been banned by the UK for seabass in its territorial waters.[221]

In this section we showed two ways companies in the Planet Tracker Universe could improve their returns and become more sustainable at the same time, having previously shown the same is possible with improved revenue growth, EBIT margin and operational cash flow. In addition, improved sustainability can also improve valuation multiples.

IMPROVED SUSTAINABILITY CAN LEAD TO A RE-RATING

In addition to the growth of the four drivers already discussed (revenue, EBIT margins, operating cash flow and returns), a key characteristic of best/worst performers in the Planet Tracker Universe (from a share price perspective) has been the expansion or compression of valuation multiples.

Multiples expansion/compression is a reasonably good proxy for non-financial indicators such as confidence in a company's strategy or management of risks, even though it also correlates with many other financial metrics.

Improved sustainability can drive multiples expansion

Looking ahead, improved sustainability is arguably a key way for companies to drive a re-rating [XLVI] of their share prices since research has shown that the market rewards firms with high corporate sustainability performance. [222, 223]

Sustainability recommendations to improve valuation multiples

With this in mind, the disclosure, management and mitigation of natural capital risks that weigh on their businesses could possibly lead to a re-rating of companies in our Universe.

The main actions companies exposed to seafood could implement to mitigate those risks are:

- **Implement independently verified sustainability policies** compliant with the GRI[XLVII]: this would allow investors to know, understand and analyse these risks.
- **Align sustainability strategies with general corporate strategies:** for instance, Yokorei has switched from an annual report to an integrated report in 2020, where sustainability and financial considerations go hand in hand.[224]
- **Disclose seafood volumes sourced, handled and sold by species and location.** This is a key requirement that would allow investors to gauge how much overfishing risk is embedded in each company. No disclosure is likely to generate suspicions.
- **Commit to reducing overfishing of the species they sourced and present a credible plan to achieve that.** For instance, Nissui has an objective to procure only marine products coming from sustainable sources by 2030. [225]
- **Adopt full traceability**. Besides the fact it makes sense from a financial perspective, it is also a powerful way for companies to communicate on their improved sustainability.
- **Secure sustainability certifications from respected organisations.** Certification is a fast-growing market in Japan and is often used as a proxy for sustainability by investors (in absence of better disclosure, such as transparency on volumes by species and origin).

Below, we discuss some of these actions and why they matter. Traceability and certification have already been covered pages 72 and 62 respectively.

XLVI An improvement of the valuation of these companies relative to their peers
XLVII Global Reporting Initiative www.globalreporting.org.

Disclosing volume metrics: a prerequisite to reduce overfishing

To understand to what extent the Japanese seafood value chain contributes (or not) to overfishing, companies need to disclose in detail the volume and origin of each species they source, handle, process and sell.

For instance:

- Nissui already provides a breakdown of the species it sources and some indications on where they were caught: cod, Alaska pollock, hake, herring and sardines together account for approximately 70% of the wild-caught fish handled by the group.[226] More detailed disclosure is necessary though so that investors understand the natural capital risks associated with each species.
- Seafood producer Kyokuyo distinguishes tuna and has a separate division in its business reporting. Sales in that division rose by 2% on average since 2010, driven by an increase in farmed volumes. In the year ending March 2020, for instance, larger sizes of farmed bluefin tuna led to an increase in sales and profits – see Figure 45.

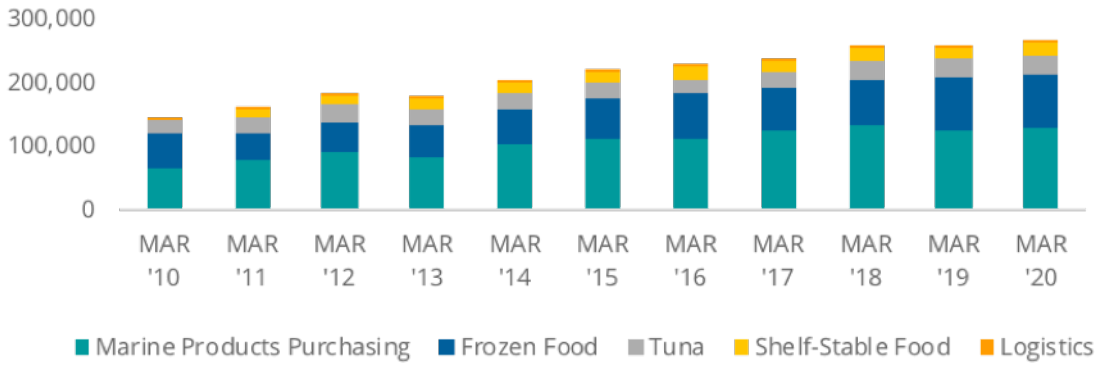


Figure 45: *Sales Breakdown by Division at Kyokuyo.*[227]

However, in both cases, the disclosure is not detailed enough to correctly assess the contribution of each company to overfishing.

Yet there are simple ways a company could provide such information publicly, besides providing seafood volumes on their website or annual report.

For instance, the Ocean Disclosure Project is a reporting framework for seafood-buying companies including retailers, suppliers and fish feed manufacturers, to voluntarily disclose their wild-caught seafood sourcing alongside information on the environmental performance of each source. Companies submit data directly to the website of the Ocean Disclosure Project and a profile for each company is created, allowing visibility, for each company, of which fish species handled, where it was caught, through which method (e.g. bottom trawling), etc.[228]

The key limitation of that resource is that no volumes by species are by company is currently disclosed though.

If companies disclosed volume data, their contribution to overfishing (or absence thereof) could be assessed, potentially improving their perceived sustainability.

In addition, it would allow an assessment of how companies balance price and volume growth requirements with sustainability, thus helping investors gauge the long-term profitability potential of each company.

Indeed, if the production, processing, wholesale or retail sale of ***species that are both generating higher revenue per kg and coming from sustainable sources are prioritised, the industry would effectively align its corporate strategy with its sustainability strategy.***

Aligning corporate strategy with sustainability strategy: focus on species sourced

Among key species imported to Japan, salmon, squid and mackerel are the key drivers of volume growth, whilst prawns and above all "other fish" (a category that groups many fish species not classified elsewhere and fish meal) decreased and therefore brought total imports down over the last decade - see Figure 46.

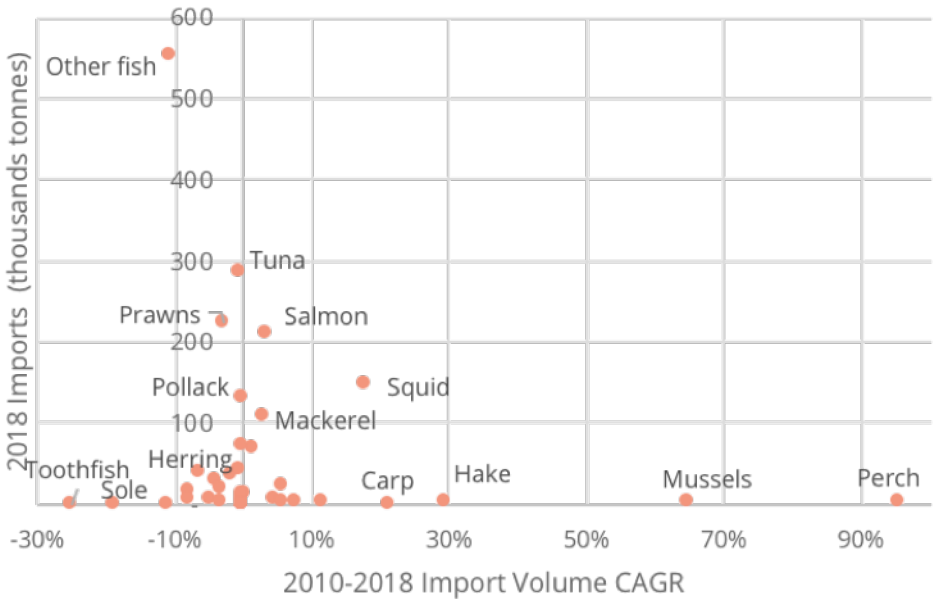


Figure 46: *2018 Imports of Seafood to Japan by Species and 2010-18 Volume CAGR.*[229]

When looking at the provenance of these species to Japan, the following is noteworthy:

- China is by far the largest exporter of squid to Japan and an estimated 36-57% of that volume is at risk of being illegal or unreported, significantly above the global average (15-30%).[230] Together with tuna, sea cucumbers and eels, squid carry the highest IUU risk among species entering Japan from China.[231]

- Salmon is typically imported from Russia or the US, with Russian salmon entering Japan twice as likely as US salmon to be at risk of coming from illegal or unreported sources.[232]

In addition, price is an important factor to consider - for instance, the import price of squid, mussels and perch declined significantly between 2010 and 2018, at least partly explaining the strong growth in import volumes of these products.[233]

Whilst growth in price/mix is desirable from a revenue growth perspective, it should be balanced with sustainability considerations: for instance, the price of sharks imported into Japan more than doubled over the period,[234] yet it is clearly not desirable for companies in our Universe to target that family of species if they are to become more sustainable – see Table 19.

Table 19: *Comparison of Price Change and Import Volume Change by Species, Ranked by Descending Price Change.*[235]

Species	Price Change	Import Volume CAGR	2018 Import volume (thousands tonnes)	2018 Price (USD/kg)
Sole	180%	-18.6%	0	12.69
Sardines	167%	-8.0%	6	4.59
Shark	133%	-10.9%	0	60.80
Trout	57%	-1.7%	37	10.86
Crab	56%	-6.3%	37	21.32
Octopus	46%	-0.5%	43	10.91
Cod	30%	0.3%	13	5.11
Fat and Oil	30%	-3.2%	17	2.90
Hake	21%	29.3%	3	5.00
Tuna	15%	-0.5%	286	7.64
Salmon	15%	3.4%	211	8.46
Total	12%	-2.7%	2,081	7.38
Eels	8%	5.9%	23	34.15
Other Fish	6%	-10.7%	553	5.32
Halibut	3%	-7.7%	14	7.23
Scallops	3%	5.9%	1	6.72
Prawns	2%	-2.8%	222	10.77
Anchovies	-2%	11.7%	3	13.28
Livers and Roes	-4%	1.6%	69	10.53
Mackerel	-11%	3.2%	108	2.81
Herring	-13%	-4.1%	28	1.63
Toothfish	-16%	-25.0%	0	11.05
Other Live Fish	-17%	-4.6%	7	13.65
Swordfish	-17%	-0.2%	8	6.17
Squid	-17%	17.6%	148	6.14
Caviar	-17%	7.5%	3	22.27
Oysters	-18%	4.5%	6	6.30
Lobster	-21%	-3.2%	3	23.31
Carp	-33%	21.2%	0	2.04
Perch	-34%	95.6%	1	6.14
Mussels	-51%	64.6%	3	3.93

CASE STUDY:
SKIPJACK AND SOUTHERN BLUEFIN TUNA IN JAPAN – TWO CONTRASTING TRENDS

No other family of species generates higher import volumes in Japan than tuna.[236] Whilst import volumes have declined by 4% between 2010 and 2018, prices have risen by 15% on average. This however masks two very opposite trends, when looking on a species by species basis.

More than half of import volumes of tuna in Japan are skipjack tuna, mostly imported filleted or prepared. This species saw a strong growth in both import prices and volumes between 2010 and 2018. Its conservation status currently is "Least Concern" as defined by the IUCN Red List.

All other species of tuna in demand in Japan are Vulnerable, Threatened or Endangered and their imports are falling, which is positive. There is one key exception, however:

Besides skipjack, the only other species also seeing strong growth in import volumes is the Southern bluefin tuna (SBT), a Critically Endangered species, i.e. one step away from being extinct in the wild. This species is in high demand for sashimi in Japan and the level of catches is not enough to satisfy that demand. In 2019, 85 vessels caught 5,851 tonnes or about 112,000 individual SBT in Japanese waters.[237] Imports are about twice that level. Japan therefore has a clear impact on the stock of that species. For instance, in Australia, more than 95% of Southern bluefin tuna are caught as juveniles in the Great Australian Bight before being fattened up in sea cages and exported to Japan, where the farming of that species is on the rise[238] – see Table 20.

Table 20: *Overview of Tuna Imports into Japan by Species, Ranked by Conservation Status.*[239]

Species	Scientific name	Conservation Status [XLVIII]	2018 Import Volumes (thousands tonnes)	Change in Volume vs 2010	2018 Import Values (USDmn)	Change in Value vs 2010	2018 Price (USD/kg)	Change in Price
Southern Bluefin	*Thunnus maccoyii*	Critically Endangered	11	29%	141	-21%	12.3	-39%
Atlantic / Pacific Bluefin	*Thunnus thynnus / Thunnus orientalis*	Endangered / Vulnerable	6	-5%	103	-17%	18.6	-13%
Bigeye	*Thunnus obesus*	Vulnerable	56	-34%	429	-50%	7.6	-25%
Yellowfin	*Thunnus albacares*	Near Threatened	50	-24%	250	-33%	5.0	-12%
Albacore	*Thunnus alalunga*	Near Threatened	13	-46%	44	-49%	3.5	-7%
Skipjack	*Katsu-wonus pelamis*	Least Concern	150	40%	1,220	259%	8.1	156%
Total			**286**	**-4%**	**2,187**	**11%**	**7.6**	**15%**

XLVIII As defined by the IUCN Red List

Aligning corporate strategies with sustainability strategies: focus on M&A

We have analysed the list of all mergers and acquisitions of the last ten years where the buyer was one of the companies in our Universe, retaining only deal sizes greater than USD 1 million (and including undisclosed sizes). In doing so, we have attempted to determine whether the acquisitions made revealed anything in terms of improved sustainability (or not).

For instance, when going through the acquisitions of seafood producer Nissui, we notice that out of the 13 acquisitions made from 2010 to 2019, at least four (Sealord Group, Miti SAS, Sealord Caistor and Flatfish) targeted companies that pride themselves on their sustainability credentials.[240] For example, the sustainability policy of Sealord Group, based in New Zealand and acquired in 2010 reads:[241]

> *Our fish should always come from well managed fisheries where:*
>
> - *Stock assessments are carried out*
> - *Quality scientific data are used*
> - *Fish stocks are healthy, or a strategy is in place to rebuild stocks to long term levels*
> - *Research is undertaken to improve knowledge and practices.*
>
> *The methods we use to fish and farm:*
>
> - *Will always be managed to ensure adverse impact to the environment is minimised*
> - *Ensure we use as much as possible of the fish caught to minimise waste*
> - *Avoid significant adverse impact on young (juvenile) fish*
> - *Use technology and proactive plans to reduce the risk of incidental mortality of marine animals and seabirds*
>
> *Our policies and practices will ensure our business does not have a significant adverse impact on any endangered or threatened species. In particular by:*
>
> - *Using new technology, undertaking our own research and mitigation programmes*
> - *Supporting Benthic Protection Areas to maintain and protect biodiversity*
>
> *We ensure Sealord products are traceable from harvest to plate.*

We do not observe the same pattern for Kyokuyo's acquisitions, or for Nichimo, which acquired San Arawa, a "factory trawler company", in 2013. Among Maruha Nichiro's three acquisitions is a bluefin tuna farming company (Nanki Kushimoto Suisan).

Acquisitions made by seafood retailers and wholesalers are all for domestic wholesalers and processors, for which it is difficult to assess the degree of sustainability. For other sub-sectors as well, no clear conclusion can be drawn about the alignment of M&A strategies with sustainability strategies. Yet we believe that using M&A to acquire more sustainable businesses (as Nissui did with Sealord Group for instance) is a very effective way to potentially improve the overall sustainability of the group and therefore potentially improve its valuation multiples.

EXPECTED IMPACT OF OUR RECOMMENDATIONS

Because our suggested recommendations focus on improving different financial indicators, apply to different sub-sectors within our Universe and sometimes rely on data not currently disclosed, they are all very different and establishing their combined impact or the quantified impact of each of them on the overall sector or each company is not possible.

Nevertheless, in Tables 21 and 22 below, we have attempted to summarise the scope and the effect of each of them, for investors to quickly grasp how their implementation could improve companies' valuations, and which sub-sectors are the most suited to implement these strategies.

Table 21: *Determining the Scope of Each of Our Recommendations*

Recommendation	Scope	Seafood Producers	Food Producers	Seafood Retailers/ Wholesalers	Food Retailers/ Wholesalers	Feed Producers	Restaurants	Conglomerates
Closed-cycle aquaculture	Aquaculture operations only	✓						✓
Manufacture of sustainable feeds	Aquafeeds operations only	✓	✓			✓		✓
Plant-based/Lab-grown seafood	Limited to investment made, likely to be small to start with	✓	✓	✓	✓	✓	✓	✓
Implementation of certification	Entire supply chains	✓	✓	✓	✓	✓	✓	✓
Bycatch reduction	Wild-catch operations only	✓						
Removal of ghost fishing gear	Wild-catch operations only	✓						
Traceability implementation	Entire supply chains	✓	✓	✓	✓	✓		✓
Reduction in aquaculture environmental costs	Aquaculture operations only	✓						✓
Reduction in food waste	Entire supply chains	✓	✓	✓	✓	✓	✓	✓
Participation in a blue bond-based recovery of fish stocks	Fishing companies only	✓	✓					✓
Retirement of bottom trawlers	Owners of bottom trawlers only	✓						
Disclosure of seafood volumes handled	Potentially all companies, but especially seafood producers	✓	✓	✓	✓	✓	✓	✓
Sustainability policies in line with corporate strategies	All companies	✓	✓	✓	✓	✓	✓	✓
Commit to reducing overfishing	All companies except feed producers, but seafood producers especially	✓	✓	✓	✓		✓	✓

Table 22: *Main Goal and Estimated Impact of Each of Our Recommendations, Sorted by Financial Goal*

Recommendation	Main goal		Impact on				
	Financial	*Environmental*	*Revenue growth*	*EBIT margin*	*Operational cash-flow*	*Returns*	*Multiples*
Closed-cycle aquaculture	Revenue growth ↑	Overfishing ↓	↑	Likely ↑	Likely ↓	↓ in the short term ↑later	Likely ↑
Manufacture of sustainable feeds	Revenue growth ↑	Deforestation ↓ Overfishing ↓	↑	Likely ↑	Uncertain	Uncertain	Likely ↑
Plant-based/Lab-grown seafood	Revenue growth ↑	Overfishing ↓	↑	Uncertain	Uncertain	Uncertain	Likely ↑
Implementation of certification	Revenue growth ↑	Harmful environmental practises ↓	↑	Likely ↑	Uncertain	Uncertain	Likely ↑
Bycatch reduction	Revenue growth ↑	Pressure on marine animals ↓	↑ in the long-term	Likely ↑	Uncertain	Uncertain	Likely ↑
Removal of ghost fishing gear	Revenue growth↑	Pressure on marine animals ↓	↑ in the long-term	Likely ↑	Likely ↑	Likely ↑	Likely ↑
Implementation of traceability	EBIT margin ↑	IUU fishing ↓	Potentially ↑	↑	↑	↑	Likely ↑
Reduction in aquaculture environmental costs	EBIT margin ↑	Nutrient and chemical pollution ↓	Uncertain	↑	↑	Uncertain	Likely ↑
Reduction in food waste	Operational cash-flow ↑	Overfishing ↓	Potentially ↑	Likely ↑	↑	Uncertain	Likely ↑
Participation in a blue bond-based recovery of fish stocks	Returns ↑	Overfishing ↓	↓ in the short term ↑later	Uncertain	Uncertain	↑	Likely ↑
Retirement of bottom trawlers	Returns ↑	Pressure on seabed ecosystems ↓	Likely ↓	Uncertain	Uncertain	Likely ↑	Likely ↑
Disclosure of seafood volumes handled	Valuation multiples ↑	Overfishing ↓	Uncertain	Uncertain	Uncertain	Uncertain	Likely ↑
Sustainability policies in line with corporate strategies	Valuation multiples ↑	Harmful environmental practises ↓	Uncertain	Uncertain	Uncertain	Uncertain	Likely ↑
Commitment to reducing overfishing	Valuation multiples ↑	Overfishing ↓	Uncertain	Uncertain	Uncertain	Uncertain	Likely ↑

Below we comment on the least obvious of the directional financial impacts assumed for some recommendations:

Closed-cycle aquaculture: we assumed likely higher EBIT margins since aquaculture margins tend to be higher than on wild-catch operations in Japan, but it is possible that the required investments more than offset that margin difference in the short-term. Because a higher exposure to aquaculture is likely to come with higher volatility of cash-flow and lower cash conversion, we assumed a negative impact on operational cash flow, but the higher margin might offset that negative impact. The high asset intensity of closed-cycle aquaculture is likely to negatively impact returns in the short term, but not in the long term as operations are scaled and they account for a significant share of revenue.

Manufacture of sustainable feeds: deforestation-free soy for aquafeeds can be more expensive,[242] potentially translating into higher EBIT margins for feed producers.Cash conversion for feed producers is above average, so any higher exposure to feed should be positive for cash flow generation.

Plant-based / Lab-grown seafood: these are likely to be small investments to start with, with marginal impacts on financials. How quickly and effectively they are scaled will determine the impact of such investments on overall returns. Along with aquaculture, these future solutions are necessary investments for pressure on wild fish stocks to be reduced and ensure the seafood value chain can still handle real fish in the long term.

Certification: In Traceable Returns, Planet Tracker highlighted how the EBIT margins of seafood processors who are at least partly certified are higher than those of non-certified processors. This likely positive impact on margins might, however, be partially offset by additional working capital requirements.

Bycatch reduction: because bycatch can be converted into fishmeal, its reduction can negatively affect revenue in the short term. In the long run, however, the benefit of better functioning ecosystems should offset any loss in fishmeal-linked revenue. Because the targeted species are likely to generate higher margins but also higher working capital requirements than bycatch turned into fishmeal, we assumed an overall positive impact on EBIT margins and an unclear impact on cash-flows.

Traceability: In Traceable Returns, Planet Tracker demonstrated that the average EBIT margin at a seafood processing company could double following the implementation of an integrated hardware traceability solution (due to lower food recall, waste and legal costs) and that the return on such implementation was higher than on a typical M&A deal. We assumed no increase in revenue following traceability implementation but this can happen.

Reduction in the environmental costs of aquaculture: in Loch-ed Profits Planet Tracker showed that reducing those costs would increase medium-term profitability.

Reduction in food waste: this can also potentially affect revenue growth positively if the investment in food waste reduction includes improved management of prices.

Participation in a blue bond-based recovery of fish stocks: the temporary decrease in wild-catch volumes would significantly affect revenue in the short term, but in the medium term, the recovery in fish stocks would ensure higher revenue, provided that fishing does not exceed maximum sustainable yield. In our model, investors would finance the temporary loss in free cash flow meaning that the cash impact should be neutral for fishing companies but transaction costs and increased monitoring and regulation costs might affect margins in the short term.

Commit to reducing overfishing: announcing a clear plan to achieve that goal should not have an impact on financials. Executing that plan and reducing the fishing of some species might result in short term revenue decrease but in the medium term it would ensure higher revenue and profit growth as fish stocks recover.

CALL FOR ACTION

This report has demonstrated that between 2010 and 2019, rising profits and share prices of 70 Japanese companies exposed to seafood defied the constraints of falling production, consumption, imports and farming of seafood. Foreign expansion, acquisitions, vertical integration, cost-cutting and de-leveraging were used to bypass these natural capital constraints, but the last three of these strategies have their limits.

Because the financials of the companies most exposed to seafood (seafood retailers, wholesalers and producers, along with restaurants) are already suffering from natural capital constraints, and because their valuations have also de-rated relative to their peers, urgent action is required, not least because marine ecosystems on which these companies rely continue to be degraded.

Japanese companies exposed to seafood therefore should:

- Understand how defying nature can result in lower revenue growth, margins, cash flows and ultimately valuations and ability to repay debt
- Implement some or all of the sustainable growth strategies recommended by Planet Tracker, depending on their relevance for each company:
  - *Disclose* seafood volumes handled by species and origin
  - *Commit to* reducing overfishing
  - *Develop* closed-cycle aquaculture operations, sustainable feeds, plant-based seafood and lab-grown seafood, traceability solutions, and certified products
  - *Reduce* bycatch, the environmental costs of aquaculture, and food waste
  - *Gradually retire* and write-off bottom trawling fleets, freeze their footprint and not trawl MPAs
  - Remove ghost fishing gear
  - *Implement* independently verified sustainability policies in both English and Japanese, that inform corporate and M&A strategies
  - *Consider* participating in a blue bond scheme that would allow for a recovery in fish stocks while increasing their returns

Analysts, investors, lenders, bankers and insurers of Japanese seafood companies should:

- Understand how defying nature can result in lower revenue growth, margins, cash flows and ultimately valuations and ability to repay debt for these companies
- Engage with these companies on the ways to align revenue, profit and cash flow growth strategies with natural capital constraints, including by discussing the merits of the recommendations provided by Planet Tracker (see above) with each company
- Understanding that whilst growth in the five key financial metrics outlined above currently drive share price performance, these metrics fail to allow an assessment of natural capital management. Volume-based metrics including species and origin would allow to assess both financial and natural capital-related performance
- Discuss, design and structure financial tools that aim at reducing overfishing or improving the general sustainability of the industry. Besides the blue bond previously mentioned, another example could be a sustainability-linked bond where a fishing company currently engaged in bottom trawling would commit not to trawl marine protected areas and freeze its trawling footprint, secure debt at a low interest rate but pay penalties if it breached its commitments

Governments, policymakers, fisheries agencies and regulators should:

- Understand how the status quo is likely to negatively impact tax receipts, the balance of payments, value added (hence GDP growth) and employment if natural capital continues to be depleted
- Ensure that fishing quotas are set in line with scientific advice and not higher than maximum sustainable yields and that they eventually cover all species
- Encourage companies to disclose seafood volumes sourced
- Support initiatives that reduce overfishing
- Reduce any form of support that encourages overfishing (such as subsidies)
- Assess the feasibility of a blue bond scheme that would allow for a recovery in fish stocks

THE MOMENTUM IS FAVOURABLE

There are signs that Japanese companies exposed to seafood are warming to some of the recommendations previously outlined.

Time-bound commitment by SeaBOS

For instance, members of SeaBOS (a group of ten of the largest seafood companies in the world, including four Japanese – Maruha Nichiro, Nissui, Kyokuyo and Cermaq, a subsidiary of Mitsubishi) agreed a number of sustainability goals in October 2020 to be reached by the end of 2021. This is very important for the future of oceans given that SeaBOS represents over 10% of global seafood production.[243] Planet Tracker covered this in "Back to School: Can the EU Learn from Others on Fishing Subsidies?". The table below outlines those goals and compares them with the recommendations we have outlined – see Table 23.

Table 23: Goals Agreed by SeaBOS Members Compared to Planet Tracker Recommendations.[244]

Goal agreed by SeaBOS members [XLIX]	**Relevant Planet Tracker recommendations**
Eliminate IUU fishing and forced, bonded and child labour in our operations–and implement measures to address those issues in their supply chains –with public reporting on progress in 2022 and 2025	• Implementation of traceability solutions
Extend the collaboration with the Global Ghost Gear Initiative to solve the problem of lost and abandoned fishing gear; and combine to clean up plastics pollution from our coasts and waterways	• Removal of ghost fishing gear
Reduce impacts on endangered species	• Disclosure of seafood volumes handled • Commitment to reduce overfishing
Establish a roadmap to identify ways to reduce antibiotics	• Reduction of the environmental costs of aquaculture
Set CO_2 emissions reduction goals and reporting approaches from each company	• Implementation and reporting against independently verified sustainable policies
n.a.	• Reduction in bycatch
n.a.	• Retirement of bottom trawlers
n.a.	• Reduction in seafood waste
n.a.	• Development of sustainable feeds
n.a.	• Development of plant-based seafood and lab-grown seafood
n.a.	• Development of certified products
n.a.	• Participation in a blue bond-based fish stock recovery

XLIX as disclosed on December 8th, 2020

In addition, the regulatory framework is evolving positively.

Progress on the legislative front

Japan passed a law in December 2020 that bans the importation of seafood sourced from IUU origins, similar to existing laws in the US and in the EU.[245] Depending upon the details in the ministerial orders that will allow the implementation of this law (expected in two years), such as the species covered or requirements around traceability, this law has the potential to drastically reduce imports of IUU fish into Japan.

Japanese Prime Minister Yoshihide Suga announced in December 2020 that his country would join with 13 other nations ("the Ocean Panel countries") to adopt an ambitious set of actions to sustainably manage 100% of national waters to protect the ocean and solve global challenges. The 14 Ocean Panel countries - which together catch 19% of the world's fish[246] - each committed to put a Sustainable Ocean Plan in place by 2025. To reach that goal, 74 transformations are targeted by signatories.

These include:[247]

- *Eliminate illegal, unreported and unregulated fishing by incentivising the use of the latest innovations and technologies-such as digital traceability-to increase transparency*
- *Minimise bycatch, discards and waste in seafood supply chains*
- *Explore in a precautionary manner the potential to sustainably harvest new species from the ocean, without undermining ecosystem health*
- *Eliminate ghost fishing gear through such means as re-use and retrieval, promoting gear marking and loss reporting, and supporting development of new environmentally friendly cost-effective gear.*
- *Encourage the aquaculture industry to apply best practices in order to reduce the amount of nutrient leakage in connection with feed formulation and application, and minimise the discharge of excess antibiotics*

The Ocean Panel also supports a global target to protect 30% of the ocean by 2030, where each country's contribution will depend on national circumstances.

L High Level Panel for a Sustainable Ocean Economy

APPENDICES

APPENDIX A: METHODOLOGIES USED

Identifying companies exposed to seafood

To identify the Universe of companies exposed to seafood companies in Japan, we used the financial data provider FactSet, and followed these steps:

1. Screen all listed companies headquartered in Japan where the business description or product line included one or several of the following keywords: “fish”, “seafood”, “aquaculture”, “fishing”, “marine”.
2. Add any companies defined as the Universe in the Planet Tracker report Perfect Storm, released in October 2019, but not covered by step 1). This was the case, for instance with Hanwa Co., e.g., if a company is engaged in a seafood-related activity that is not covered by the previous keywords,
3. Remove any ‘false positives’, where the activities in which the company is engaged had no link with seafood.

Note: there are cross shareholdings between some companies in our Universe. For instance, Mitsubishi is the ultimate owner of Albis, or Nissui is the ultimate owner of Chubu Suisan.

Assigning each company to a sub-sector

Once we had identified the publicly listed companies that compose the Planet Tracker Universe, we separated them into seven distinct sub-sectors:

- Food Producers: companies engaged in the manufacture of food products, including seafood, but where seafood does not constitute the majority of the activity. Examples include Hagoromo Foods or Toyo Suisan Kaisha.
- Seafood Producers: companies where seafood processing, aquaculture or wild-catch is the key activity. We combined processing with aquaculture and wild-catch as we found no company involved solely in either aquaculture or wild-catch. Examples include Maruha Nichiro or Kyokuyo.
- Feed Producers: companies where the production of feed for livestock in general, and aquaculture in particular, is the main activity. Examples include Higashimaru and Nichiwa Sangyo.
- Food Retailer/Wholesalers: companies engaged in the retail or wholesale of food products, including seafood. Examples include Maxvalu Tokai or JM Holdings.
- Seafood Retailer/Wholesalers: companies where the wholesale or retail sale of marine products is the key activity. Examples include Chuo Gyorui or Tohto Suisan.
- Restaurants: companies engaged in the food service industry, where operating restaurants is the key activity and where seafood constitutes at least a significant share of the activity. Examples include Tokyo Ichiban Foods or Uoki.
- Conglomerates/Other: large companies engaged in more than two different sectors or any other company with key exposure to marine products, such as manufacture of fishing vessels and fishing hardware. Examples include Mitsubishi or Nitta Gelatin.

APPENDIX B: FINANCIAL DATA

Overview of Revenue Trends by Sub-Sector

Table 24: *Planet Tracker Universe: Overview of Revenue Trends (2010-19).* [248]

Metric/Sector	Number of companies	2019 Revenue (JPYmn)	2010-19 Revenue CAGR	2010-2019 Domestic Revenue CAGR	2010-2019 Foreign Revenue CAGR	2019-21 Consensus Revenue CAGR
Overall Sector	70	44,476,695	7.1%	4.9%	13.0%	-1.7%
Food Producers	14	1,915,285	4.1%	3.4%	14.9%	0.9%
Seafood Producers	11	2,689,272	2.5%	1.2%	15.8%	-0.8%
Feed Producers	4	523,484	7.8%	7.8%	_na	1.9%
Food Retailers/ Wholesalers	11	1,443,337	8.1%	6.9%	_na	0.8%
Seafood Retailers/ Wholesalers	10	948,726	-0.2%	-0.4%	_na	-1.0%
Restaurants	8	158,900	-1.2%	-1.3%	_na	-5.2%
Conglomerates / Other	12	36,797,692	8.0%	5.7%	12.7%	-2.0%

Overview of Profit Trends by Sub-Sector

Table 25: *Planet Tracker Universe: Overview of Profit Trends (2010-19).* [249]

Metric/Sector	Number of companies	2019 EBIT Margin (%)	2010-2019 EBIT Margin Change (%pts)	2019-2021 Consensus EBIT Margin Change (%pts)	2010-19 Net Income CAGR	2019-21 Consensus Net Income CAGR
Overall Sector	70	3.9%	-1.2%	-0.9%	2.5%	9.3%
Food Producers	14	4.2%	0.9%	0.2%	9.8%	6.3%
Seafood Producers	11	2.3%	0.7%	-0.1%	14.7%	2.8%
Feed Producers	4	3.0%	1.7%	-0.2%	37.2%	2.6%
Food Retailers/ Wholesalers	11	1.7%	-0.5%	0.2%	5.4%	6.6%
Seafood Retailers/ Wholesalers	10	1.3%	1.0%	-0.2%	-231.3%	-0.7%
Restaurants	8	-3.2%	-0.6%	-3.0%	1.9%	-41.4%
Conglomerates / Other	12	4.1%	-2.0%	-1.1%	1.7%	10.1%

Key P&L Metrics by Company

Table 26: *Key P&L Metrics by Company, Ranked Alphabetically (in JPYmn).*[250]

Subsector	Company name	2019 Revenue (JPY MN)	2010-19 Revenue CAGR	2019 Gross Margin (%)	2010-2019 Gross Margin Change (%pts)	2019 EBIT Margin (%)	2010-19 EBIT CAGR (%)
Food Producers	AHJIKAN CO., LTD.	44,752	3.2%	26.4%	1.7%	2.1%	1.6%
Conglomerates / Other	Akasaka Diesels Ltd.	9,668	-1.8%	15.8%	-1.5%	1.2%	-16.2%
Food Retailers/ Wholesalers	ALBIS Co., Ltd.	87,321	2.1%	27.7%	2.0%	1.5%	9.1%
Food Producers	Aohata Corporation	20,283	1.2%	26.3%	10.5%	2.1%	-8.6%
Seafood Retailers/ Wholesalers	Chubu Suisan Co., Ltd.	40,221	-0.6%	4.3%	-0.4%	0.8%	-201.1%
Seafood Retailers/ Wholesalers	Chuo Gyorui Co., Ltd.	193,923	1.5%	5.9%	0.7%	0.8%	-207.5%
Food Retailers/ Wholesalers	Daikokutenbussan Co., Ltd.	212,059	10.1%	21.5%	0.3%	2.8%	3.4%
Seafood Producers	DAIREI CO.LTD.	26,865	_na	16.2%	_na	4.5%	_na
Seafood Retailers/ Wholesalers	Daisui Co., Ltd.	125,056	-1.2%	5.5%	0.8%	0.3%	3.3%
Restaurants	Daisyo Corporation	61,032	-3.4%	56.1%	-3.6%	0.6%	-185.7%
Seafood Retailers/ Wholesalers	Daito Gyorui Co., Ltd.	102,027	-3.8%	5.5%	0.3%	0.1%	-183.0%
Feed Producers	FEED ONE CO. LTD.	215,050	_na	11.0%	_na	2.7%	_na
Conglomerates / Other	Furuno Electric Co., Ltd.	83,066	1.3%	33.1%	1.7%	3.4%	9.5%
Restaurants	General Oyster, Inc.	3,579	_na	65.9%	_na	-3.8%	_na
Seafood Producers	Global Food Creators Co., Ltd.	26,254	1.5%	17.0%	0.2%	1.5%	-3.0%
Restaurants	GOURMET KINEYA CO., LTD.	38,971	0.4%	35.3%	-2.2%	-1.7%	-13.6%
Food Producers	Hagoromo Foods Corporation	82,852	0.6%	37.5%	-0.4%	4.1%	9.7%
Food Retailers/ Wholesalers	Halows Co., Ltd.	134,659	6.9%	24.9%	0.9%	4.0%	10.4%
Conglomerates / Other	Hanwa Co., Ltd.	1,907,493	3.5%	4.2%	1.1%	-0.8%	-201.4%
Food Producers	Hayashikane Sangyo Co., Ltd.	45,176	-1.4%	16.1%	2.4%	2.6%	25.5%
Feed Producers	Higashimaru Co., Ltd.	12,442	4.5%	16.0%	0.9%	-2.0%	-202.6%
Seafood Retailers/ Wholesalers	Hohsui Corporation	80,492	9.4%	7.8%	-0.5%	1.3%	16.8%
Seafood Producers	Ichimasa Kamaboko Co., Ltd.	35,589	2.6%	26.1%	-3.8%	3.6%	-5.1%
Food Producers	Imuraya Group Co., Ltd.	42,310	3.2%	29.7%	-3.3%	1.1%	-1.2%
Conglomerates / Other	Itochu Corporation	10,975,065	13.0%	13.5%	-15.0%	6.9%	15.4%
Food Retailers/ Wholesalers	JM Holdings Co., Ltd.	113,278	_na	28.6%	_na	4.3%	_na
Restaurants	Kaihan Co., Ltd.	3,978	_na	66.9%	_na	-16.9%	_na
Food Producers	Kakiyasu Honten Co., Ltd.	43,937	0.9%	48.3%	3.7%	5.4%	5.5%

Subsector	Company name	2019 Revenue (JPY MN)	2010-19 Revenue CAGR	2019 Gross Margin (%)	2010-2019 Gross Margin Change (%pts)	2019 EBIT Margin (%)	2010-19 EBIT CAGR (%)
Restaurants	Kanmonkai Co., Ltd.	4,473	-7.5%	65.4%	8.7%	-7.4%	-7.7%
Seafood Producers	Kyokuyo Co., Ltd.	262,519	5.5%	9.2%	-2.2%	1.3%	12.1%
Conglomerates / Other	Marubeni Corporation	6,827,641	7.1%	10.2%	-3.9%	-1.7%	-192.6%
Seafood Producers	Maruha Nichiro Corp.	905,204	1.1%	13.0%	0.7%	2.5%	0.5%
Seafood Producers	Maruichi Co., Ltd.	230,722	4.9%	10.9%	0.7%	1.0%	17.2%
Food Retailers/ Wholesalers	Maxvalu Kyushu Co., Ltd.	185,013	5.0%	24.1%	0.2%	1.1%	1.9%
Food Retailers/ Wholesalers	Maxvalu Tokai Co., Ltd.	271,516	6.3%	26.5%	1.7%	2.0%	6.5%
Conglomerates / Other	Mitsubishi Corporation	14,779,734	12.3%	12.1%	-10.5%	5.0%	2.8%
Food Producers	Natori Co., Ltd.	47,974	4.3%	27.9%	-6.8%	3.6%	1.7%
Seafood Producers	NICHIMO CO., LTD.	117,900	3.7%	8.3%	-0.8%	2.3%	36.9%
Food Producers	Nichirei Corporation	584,858	3.3%	16.9%	-3.0%	5.2%	12.9%
Feed Producers	Nichiwa Sangyo Co., Ltd.	41,975	-0.4%	6.3%	-1.0%	1.7%	9.0%
Food Producers	NIHON SEIMA CO., LTD.	3,768	-4.3%	17.5%	-7.7%	-0.5%	-173.7%
Seafood Producers	Nippon Suisan Kaisha, Ltd.	690,016	3.8%	19.1%	-3.0%	3.5%	20.5%
Food Retailers/ Wholesalers	Nishimoto Co., Ltd.	182,603	_na	16.9%	_na	2.1%	_na
Conglomerates / Other	Nitta Gelatin Inc.	34,543	2.4%	21.5%	-1.4%	-2.2%	-191.5%
Conglomerates / Other	Nitto Seimo Co., Ltd.	18,348	3.2%	19.6%	2.8%	3.2%	-280.9%
Seafood Producers	OUG Holdings Inc.	319,813	0.0%	7.2%	-0.1%	0.6%	0.4%
Food Retailers/ Wholesalers	Plant Co., Ltd.	92,146	1.1%	18.7%	0.6%	-3.3%	-202.9%
Food Retailers/ Wholesalers	S. ISHIMITSU&CO LTD	38,179	1.3%	14.2%	1.9%	0.8%	-4.3%
Food Retailers/ Wholesalers	Satoh & Co., Ltd.	49,562	1.7%	18.5%	1.9%	3.0%	12.6%
Conglomerates / Other	Shimano Inc.	363,230	6.1%	40.2%	4.0%	19.7%	10.9%
Conglomerates / Other	Shinyei Kaisha	41,164	-1.8%	19.4%	-0.3%	-0.8%	-213.3%
Feed Producers	Showa Sangyo Co., Ltd.	254,017	1.9%	18.1%	1.5%	3.7%	14.3%
Conglomerates / Other	Sojitz Corp.	1,754,825	-8.8%	11.6%	7.1%	5.2%	4.1%
Food Retailers/ Wholesalers	Super Value Co., Ltd.	77,000	5.3%	20.3%	0.5%	-2.9%	-208.5%
Conglomerates / Other	Tiemco Ltd.	2,915	0.8%	43.0%	-2.3%	0.1%	-29.7%
Seafood Retailers/ Wholesalers	Tohto Suisan Co., Ltd.	117,857	-1.5%	5.5%	0.2%	1.5%	45.8%
Restaurants	Tokyo Ichiban Foods Co., Ltd.	4,620	3.7%	60.8%	-8.4%	4.1%	-215.6%
Food Producers	Toyo Suisan Kaisha, Ltd.	416,031	3.5%	36.8%	-0.4%	7.9%	4.7%

Subsector	Company name	2019 Revenue (JPY MN)	2010-19 Revenue CAGR	2019 Gross Margin (%)	2010-2019 Gross Margin Change (%pts)	2019 EBIT Margin (%)	2010-19 EBIT CAGR (%)
Seafood Retailers/ Wholesalers	Tsukiji Uoichiba Company, Limited	71,658	-1.9%	4.5%	-0.1%	-0.9%	3.2%
Restaurants	Umenohana Co., Ltd.	30,462	0.7%	62.5%	-5.1%	-12.7%	-227.0%
Restaurants	Uoki Co., Ltd.	11,785	-2.9%	42.0%	1.0%	0.9%	-195.2%
Seafood Retailers/ Wholesalers	Uoriki Co., Ltd.	30,709	2.5%	40.3%	0.4%	4.1%	15.1%
Food Producers	Wakou Shokuhin Co., Ltd.	11,082	10.5%	23.4%	2.3%	-1.8%	11.0%
Food Producers	Yamae Hisano Co., Ltd.	522,102	7.3%	9.1%	0.9%	1.0%	2.9%
Seafood Producers	Yokohama Gyorui Co., Ltd.	33,929	-2.5%	4.8%	-0.2%	0.1%	-20.6%
Seafood Retailers/ Wholesalers	Yokohama Maruuo Co., Ltd.	46,813	-3.8%	6.9%	1.0%	0.2%	-1.0%
Seafood Retailers/ Wholesalers	Yokohama Reito Co., Ltd.	139,970	1.6%	10.8%	2.1%	4.8%	7.0%
Seafood Producers	Yonkyu Co., Ltd.	40,461	4.5%	13.4%	2.7%	3.4%	12.5%
Food Producers	Yoshimura Food Holdings KK	29,876	_na	20.2%	_na	2.5%	_na
Food Producers	Yutaka Foods Corporation	20,285	-0.7%	10.1%	-1.8%	6.9%	-2.7%

Top 10/Bottom 10 Companies Ranked by Share Price Performance

Table 27: *Key Financial Indicators - Top Ten Companies Ranked by Share Price Performance (2010-19.)*[251]

Share Price Change Rank (2010-19)	1	2	3	4	5	6	7	8	9	10	Median
Company name	Ichimasa Kamaboko Co., Ltd.	Shimano Inc.	Halows Co., Ltd.	Nichirei Corporation	Tokyo Ichiban Foods Co., Ltd.	Itochu Corporation	Uoki Co., Ltd.	Imuraya Group Co., Ltd.	Nippon Suisan Kaisha, Ltd.	Furuno Electric Co., Ltd.	
Subsector	Seafood Producers	Conglomerates / Other	Food Retailers/ Wholesalers	Food Producers	Restaurants	Conglomerates / Other	Restaurants	Food Producers	Seafood Producers	Conglomerates / Other	
Share Price Change (2010-19)	325%	280%	280%	252%	185%	167%	151%	146%	145%	145%	176%
2010 P/E	28.9	21.9	9.8	14.6	-12.1	4.5	-8.5	89.3	33.3	-16.1	12.2
2019 P/E	28.5	31.6	15.1	18.5	51.1	6.8	59.7	204.6	12.5	15.5	23.5
2010-19 Diluted EPS CAGR	-7%	12%	14%	21%	-205%	14%	-184%	-5%	-234%	22%	3.4%
2010 EV/EBIT	13.7	10.7	9.2	12.7	-10.1	9.4	-21.9	33.8	62.0	19.1	11.7
2019 EV/EBIT	13.9	20.1	9.4	15.3	26.3	21.5	22.0	47.4	20.1	9.2	20.1
2010-19 EBIT CAGR	-5.1%	10.9%	10.4%	12.9%	-215.6%	15.4%	-195.2%	-1.2%	20.5%	9.5%	9.9%
2010-19 EBIT Margin Change	-3.6%	6.5%	1.0%	2.9%	5.7%	1.2%	2.0%	-0.5%	2.6%	1.7%	1.8%
2010-19 Gross Margin Change	-3.8%	4.0%	0.9%	-3.0%	-8.4%	-15.0%	1.0%	-3.3%	-3.0%	1.7%	-3.0%
2010-19 Revenue CAGR	2.6%	6.1%	6.9%	3.3%	3.7%	13.0%	-2.9%	3.2%	3.8%	1.3%	3.5%
2010 Share of Domestic Revenue	100%	67%	100%	100%	100%	74%	100%	100%	78%	72%	100.0%
2019 Share of Domestic Revenue	100%	11%	100%	86%	93%	79%	100%	100%	69%	40%	89.6%
Change in Proportion of Domestic Revenue (2010-2019)	0%	-56%	0%	-14%	-7%	5%	0%	0%	-10%	-32%	-3.6%
2010-19 Operating Cash Flow CAGR	-1%	9%	-238%	10%	-14%	11%	-204%	8%	14%	8%	7.7%
2010-19 Free Cash Flow CAGR	-6%	7%	-201%	-218%	-216%	12%	-199%	4%	-2%	7%	-4.2%
2010 Net debt/EBITDA	2.6	-1.9	3.5	3.5	-25.1	6.4	-22.3	2.3	10.5	-0.6	2.5
2019 Net Debt/EBITDA	2.3	-3.0	0.1	1.4	-1.4	2.9	-1.1	2.0	4.4	-0.2	0.8
2010 Debt/ Equity	154%	1%	134%	83%	15%	175%	369%	46%	354%	35%	109%
2019 Debt/ Equity	64%	1%	46%	50%	34%	106%	185%	38%	131%	25%	48%

Table 28: *Key Financial Indicators - Bottom Ten Companies Ranked by Share Price Performance (2010-19).*[252]

Share Price Change Rank (2010-19)	53	54	55	56	57	58	59	60	61	62 [LI]	Median
Company name	Tiemco Ltd.	Chubu Suisan Co., Ltd.	NIHON SEIMA CO., LTD.	Nitta Gelatin Inc.	Daito Gyorui Co., Ltd.	Tsukiji Uoichiba Company, Limited	Kanmonkai Co., Ltd.	Hohsui Corporation	Hayashikane Sangyo Co., Ltd.	Shinyei Kaisha	
Subsector	Conglomerates / Other	Seafood Retailers/ Wholesalers	Food Producers	Conglomerates / Other	Seafood Retailers/ Wholesalers	Seafood Retailers/ Wholesalers	Restaurants	Seafood Retailers/ Wholesalers	Food Producers	Conglomerates / Other	
Share Price Change (2010-19)	4%	3%	-4%	-5%	-6%	-10%	-15%	-20%	-27%	-52%	-8%
2010 P/E	-121.5	37.8	-6.7	7.0	-36.6	117.3	1.8	45.2	-8.3	-47.2	(2.5)
2019 P/E	-114.9	19.7	-117.6	-17.9	-97.9	-3.1	-9.7	15.8	6.2	-3.9	(6.8)
2010-19 Diluted EPS CAGR	-201%	-200%	-179%	-191%	-24%	2%	-14%	16%	-213%	13%	-101.8%
2010 EV/EBIT	-103.1	-10.5	-169.9	_na	65.9	73.5	5.4	20.7	-55.0	35.3	5.4
2019 EV/EBIT	-340.6	-2.3	-103.7	13.8	89.3	-10.8	-16.7	28.7	15.1	-47.0	(6.6)
2010-19 EBIT CAGR	-29.7%	-201.1%	-173.7%	-191.5%	-183.0%	3.2%	-7.7%	16.8%	25.5%	-213.3%	-101.7%
2010-19 EBIT Margin Change	-1.5%	1.4%	-6.1%	-8.2%	0.5%	-0.3%	0.1%	0.6%	2.3%	-1.1%	-0.1%
2010-19 Gross Margin Change	-2.3%	-0.4%	-7.7%	-1.4%	0.3%	-0.1%	8.7%	-0.5%	2.4%	-0.3%	-0.3%
2010-19 Revenue CAGR	0.8%	-0.6%	-4.3%	2.4%	-3.8%	-1.9%	-7.5%	9.4%	-1.4%	-1.8%	-1.6%
2010 Domestic Revenue	100%	100%	80%	71%	100%	100%	100%	100%	100%	86%	100%
2019 Domestic Revenue	100%	100%	61%	56%	100%	100%	100%	100%	100%	91%	100%
Change in Proportion of Domestic Revenue (2010-2019)	0%	0%	-19%	-15%	0%	0%	0%	0%	0%	5%	0.0%
2010-19 Operating Cash Flow CAGR	-189%	-7%	-3%	3%	18%	-192%	-8%	14%	-193%	8%	-4.8%
2010-19 Free Cash Flow CAGR	54%	-210%	4%	5%	-227%	-185%	-183%	18%	5%	28%	4.3%
2010 Net debt/ EBITDA	-23.2	86.9	2.7	2.2	-36.2	-23.7	35.5	2.0	15.5	15.2	2.5
2019 Net Debt/ EBITDA	-27.8	-11.6	6.3	9.0	12.3	-17.6	-8.3	7.3	6.0	461.1	6.1
2010 Debt/ Equity	1%	0%	74%	118%	123%	134%	13073%	38%	335%	411%	121%
2019 Debt/ Equity	0%	0%	40%	46%	78%	111%	400%	351%	162%	945%	95%

LI Some companies did not exist in 2010, explaining why the worst performing company is ranked 62, and not 70.

APPENDIX C: GLOSSARIES

Seafood glossary

Term	Definition
Biologically sustainable fish stocks	A fish stock whose abundance is at, or greater than, the level that can produce its maximum sustainable yield (MSY) is classified as biologically sustainable. In contrast, when abundance falls below the MSY level, the stock is considered biologically unsustainable. The MSY is the largest yield (or catch) that can be taken from a species' stock over an indefinite period.[253]
Fisheries Improvement Project (FIP)	A multi-stakeholder initiative that aims to help fisheries work towards sustainability.[254]
Illegal, unregulated or unreported fishing (IUU fishing)	All fishing that breaks fisheries' laws or occurs outside the reach of fisheries' laws and regulations.[255]
Marine Stewardship Council (MSC)	An independent non-profit organisation which sets standards for sustainable fishing. The MSC Fisheries Standard measures the sustainability of wild-capture fisheries. The Chain of Custody Standard ensures the blue MSC label is only displayed on seafood that is traceable to an MSC certified sustainable fishery.[256]
Seafood processing	The conversion of whole fish or shellfish to various other product forms such as fresh fish fillets or steaks or other items such as frozen products, breaded fish portions and canned or smoked products.[257]
Traceability	The ability to systematically identify a unit of production, track its location and describe any treatments or transformations at all stages of production, processing and distribution. [258]
Transshipments	The transfer of catch from one vessel to another. During a transshipment, a fishing vessel meets up with a large, refrigerated cargo-type ship, known as a "reefer". They tie up alongside one another and drift while the fishing vessel offloads its catch before heading back out to the fishing grounds.[259]
World Wildlife Fund (WWF)	A leading organisation in wildlife conservation and endangered species.[260]

Financial glossary[261]

Term/ Acronym	Definition
Basis points (bps)	A common unit of measure for interest rates and other percentages in finance. One basis point is equal to 1/100th of 1%, or 0.01%.
Capital expenditures (Capex)	Funds used by a company to acquire, upgrade and maintain physical assets such as property, buildings, an industrial plant, technology or equipment.
Compound annual growth rate (CAGR)	A number that describes the rate at which a financial metric (e.g. revenue or profit) would have grown if it had grown at the same rate every year
Cost of goods sold (COGS)	The direct costs of producing the goods sold by a company. This amount includes the cost of the materials and labour directly used to create the good. It excludes indirect expenses, such as distribution costs and sales force costs. Also referred to as cost of sales.
Discount rate	The interest rate used to determine the present value in a DCF calculation.
Discounted cash flow (DCF)	A valuation method used to estimate the value of an investment based on its future cash flows. The present value of expected future cash flows is arrived at by using a discount rate to calculate the discounted cash flow.
Earnings before interest and tax (EBIT)	An indicator of a company's profitability. EBIT can be calculated as revenue minus expenses excluding tax and interest. Also referred to as operating earnings, operating profit or profit before interest and taxes.
Earnings before interest, tax, depreciation and amortisation (EBITDA)	A widely used metric of corporate profitability that can be used to compare companies against each other and industry averages. EBITDA is typically calculated from EBIT, to which depreciation and amortisation are added back.

Term/ Acronym	Definition
Earnings per share (EPS)	A company's net profit divided by the number of common shares it has outstanding.
Enterprise value (EV)	A measure of a company's total value, often used as a more comprehensive alternative to equity market capitalisation. EV includes in its calculation the market capitalisation of a company but also short-term and long-term debt, as well as any cash on the company's balance sheet. Enterprise value is a popular metric used to value a company for a potential takeover.
Enterprise value/ EBITDA (EV/EBITDA)	A ratio used to determine the value of a company, computed by dividing enterprise value by EBITDA. EV/EBITDA multiples can vary depending on the industry. It is reasonable to expect higher multiples in high-growth industries and lower multiples in industries with slow growth.
Enterprise value/ sales (EV/Sales)	A financial valuation measure that compares the enterprise value (EV) of a company to its annual sales. The EV/sales multiple gives investors a quantifiable metric of how to value a company based on its sales, while taking account of both the company's equity and debt.
Free cash flow (FCF)	The cash a company generates after accounting for cash outflows to support operations and maintain its capital assets. Free cash flow is a measure of profitability that excludes the non-cash expenses of the income statement and includes spending on equipment and assets as well as changes in working capital from the balance sheet.
Gross margin	A company's net sales revenue minus its cost of goods sold.
Internal rate of return (IRR)	A metric used in financial analysis to estimate the profitability of potential investments: it is the discount rate that makes the net present value of all cash flows equal to zero in a discounted cash flow analysis.
Market capitalisation	The total market value of a company's outstanding shares of stock. Commonly referred to as "market cap," it is calculated by multiplying the total number of a company's outstanding shares by the current market price of one share.
Net debt	A liquidity metric used to determine how well a company can pay all of its debts if they were due immediately. It shows how much cash would remain if all debts were paid off and if a company has enough liquidity to meet its debt obligations. It is computed as: total debt minus cash and cash equivalents.
Net present value (NPV)	The difference between the present value of cash inflows and the present value of cash outflows over a period of time.
Operational cash-flow	A measure of the amount of cash generated by a company's normal business operations.
Price-to-earnings ratio (P/E)	The ratio used for valuing a company that measures its current share price relative to its per-share earnings.
Synergies	The concept that the combined value and performance of two companies will be greater than the sum of the separate individual parts. Synergy is a term that is most commonly used in the context of mergers and acquisitions (M&A). Synergy, or the potential financial benefit achieved through the combining of companies, is often a driving force behind a merger.

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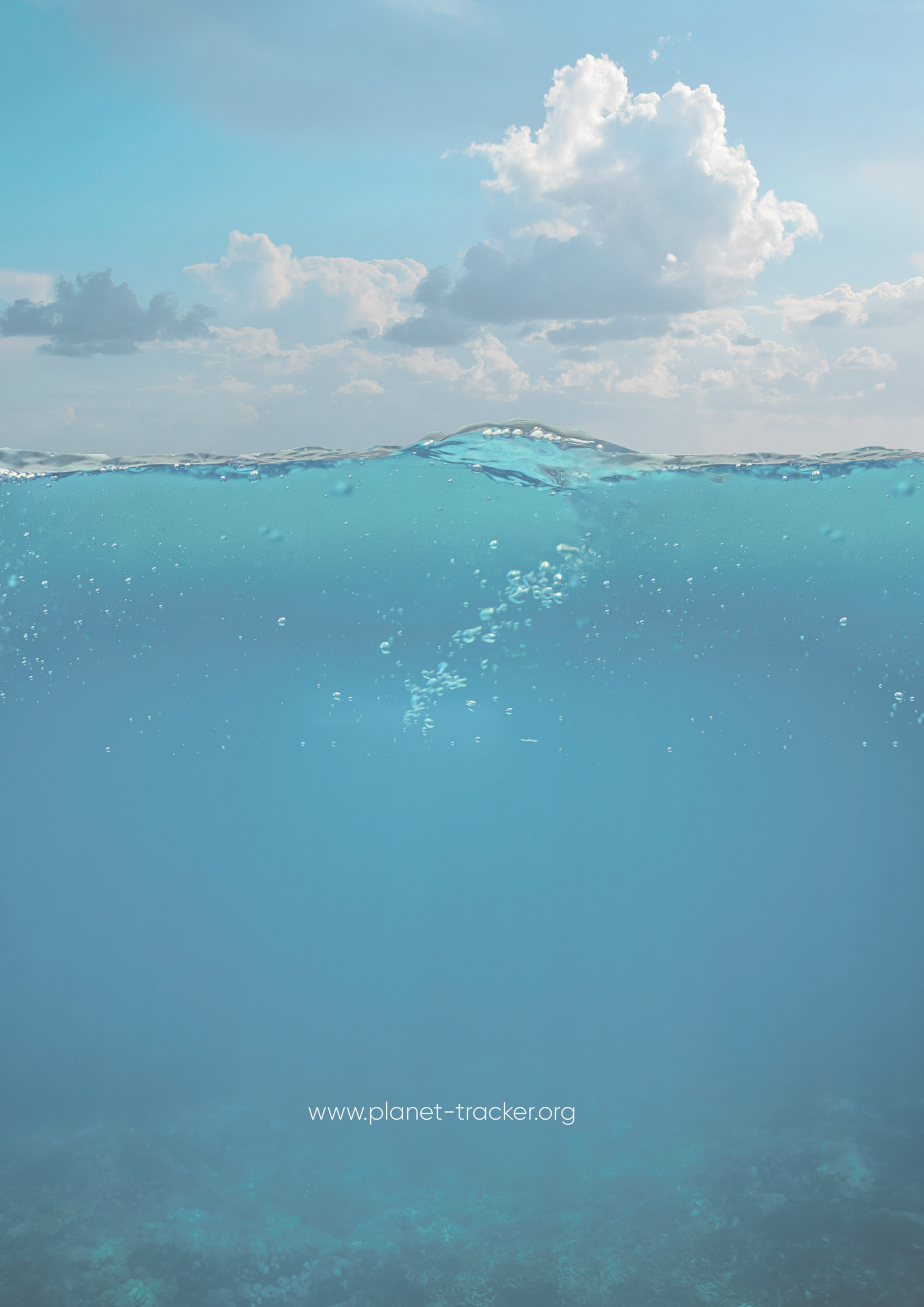

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