

MSC INSIGHTS

SUSTAINABLE FISHING, HIGHER YIELDS, AND THE GLOBAL FOOD SUPPLY

- Tackling overfishing is a 'win-win' for our planet: conserving our rich marine resources enables more people to have the protein they need to live healthily.
- Over a third of fish stocks around the world are fished at biologically unsustainable levels, endangering future food supplies as a result.
- Fisheries which are managed sustainably have higher yields in the long-term.
- Currently we are missing out on enough protein for 72 million more people every year, because fisheries have not been managed for the long-term.
- Future generations have the right to sustainable food sources, and with the global population set to reach 10 billion by 2050, the need to harness our natural resources responsibly is more urgent than ever.

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Good fisheries management is important if we are to meet the planet's future food needs. The tools for delivering sustainable seafood for everyone, while keeping our oceans healthy, already exist – what we need now is international will and cooperation to implement these across all waters, borders, and species globally.

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Dr Rohan Currey, Chief Science and Standards Officer for the Marine Stewardship Council.

FEEDING A GROWING POPULATION

The global population is set to reach 10 billion by 2050¹. How to feed this population is one of the major global challenges of our time. The United Nations Sustainable Development Goals (SDGs)² include ending hunger and achieving food security by 2030. To reach these targets, fundamental changes must be made to the way we produce, access, and consume food.

At present, the number of people who are chronically undernourished is rising, with one in 9 people around the world suffering severe hunger³ and a quarter suffering food insecurity⁴. Among under-fives, a third have been stunted or wasted by malnutrition².

Tackling the food gap has multiple dimensions. We need to ensure the distribution of food is equitable, as the poor struggle to access healthy diets while the better-off have more choice than ever before. Similarly, we also need to reduce food loss and waste, as each year approximately one billion metric tonnes of food is never consumed⁵.

But crucially, we also need to increase the food supply in a way which can be sustainably managed. While the world's population has more than doubled in the past 50 years, food production has increased four-fold³. To meet the demands of a 10 billion population, the World Resources Institute estimates that we will need a 50% increase in global food production⁶.

Accomplishing this while conserving our natural resources is an enormous challenge. But when it comes to seafood, evidence suggests that there does not need to be a trade-off between higher yields and conservation – indeed, just the opposite. If all wild-capture fisheries used sustainable practices, 16 million tonnes *more* in catch could be generated every year, meeting the protein needs for millions around the world²¹.

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Oceania has a small population but a vast ocean area that provides food security and employment for many while also generating important income for many countries with low GDP. Faced with increasing pressures, fisheries across the region require continued effective and responsive national and international management.

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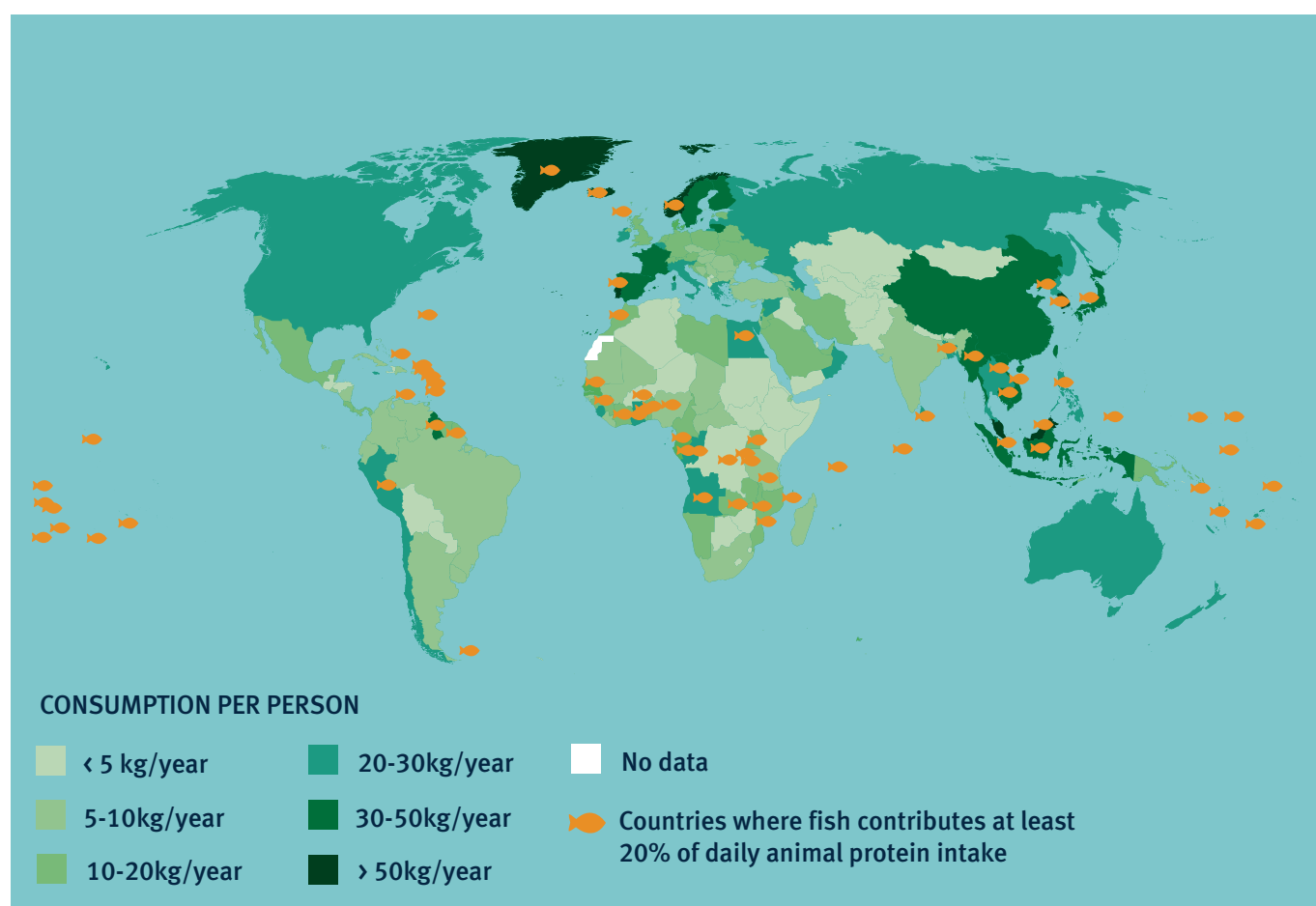
Dr Kevin Stokes
Fisheries science, management, and policy
consultant, New Zealand.



THE IMPORTANCE OF SEAFOOD TO GLOBAL DIETS

Seafood is a key source of nutrients and protein, playing a vital role in the diets of many people. Protein helps our bodies build muscles and bones, repair cells and make new ones. It is especially important in the growth of children and for the health of pregnant women. Over 3.3 billion people around the world get at least 20% of their daily animal protein intake from fish⁷.

FISH CONSUMPTION PER CAPITA AND RELIANCE ON FISH PROTEIN⁷



The consumption of fish worldwide has risen by 122% in the past 30 years⁷. The global appetite for seafood shows no signs of abating, and it continues to be one of the most highly traded commodities in the world⁷. In developing regions, fish consumption has increased from 5.2kg per person in 1961 to 19.4kg in 2017, fuelled by expanding fish production and imports⁷.

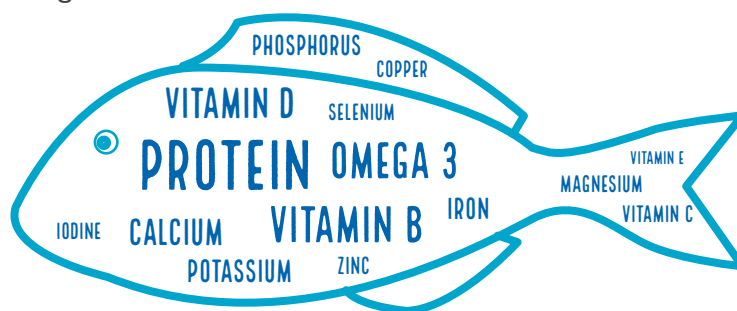
Much of the recent increase in production has come from aquaculture, but this in turn is heavily dependent on wild fisheries as a source of feed. In 2018, production from wild capture fisheries reached the highest level ever recorded, at 96.4 million tonnes, with around 60% of all seafood caught in the Global South⁷.

LOW CARBON PROTEIN

As well as being a vital source of nutrition for millions, wild seafood is a low carbon source of animal protein. Catching a kilo of fish emits only about 2% the amount of CO₂ as producing a kilo of red meat⁸, and negates the need for land clearance for grazing or feed. In terms of energy use, greenhouse gas emissions and the release of pollutants, small mid-water fisheries (such as sardine and mackerel) and mollusc aquaculture have the lowest environmental impact per unit of protein produced, with beef farming and catfish aquaculture the highest⁹.

Sustainable fishing therefore has a vital role to play in ensuring a secure food system while we also address the challenges of climate change¹⁰.

FISH AND SHELLFISH ARE
A GOOD SOURCE OF¹¹:



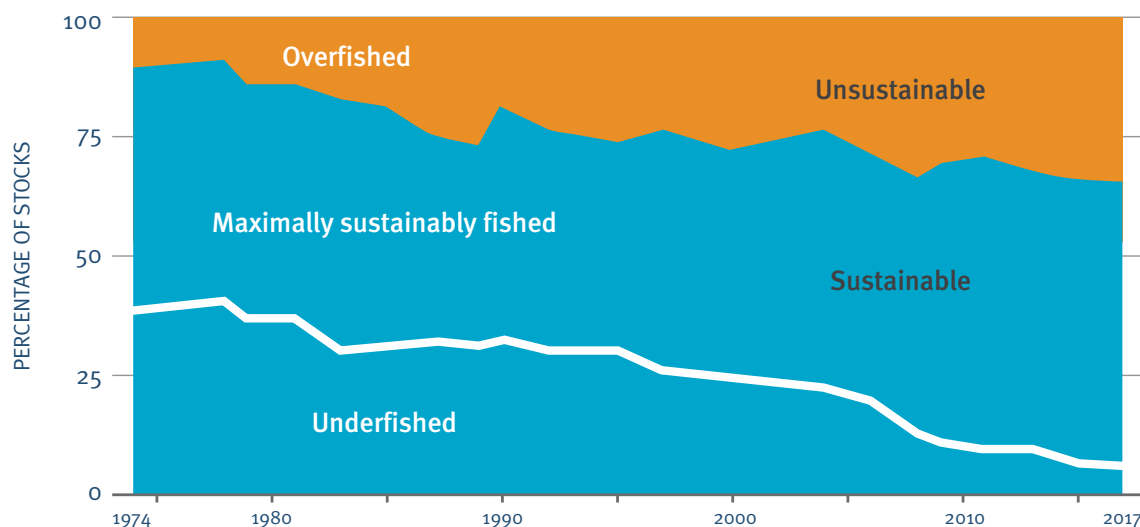
THE CRISIS OF OVERFISHING


Rising levels of overfishing continue to threaten this valuable, natural resource. In 1974, 90% of global fish stocks were fished within biologically sustainable levels. Today it is less than two thirds⁷.

Growing consumer demand, linked in part to population growth, provides an ever-expanding market for fish that is served by an efficient and truly global supply chain. This, combined with legitimate livelihoods aspirations of fishers, creates huge pressure to catch more seafood than our oceans can sustainably provide.

Although overfishing is an issue for all of the ten most landed fish, global figures hide significant variations between regions and individual stocks, with some faring better than others. According to the UN Food and Agriculture Organization (FAO), the proportion of stocks that are overfished in different areas of the oceans ranges from 11% to 63%⁷.

GLOBAL TRENDS IN THE STATE OF THE WORLD'S MARINE FISH STOCKS, 1974-2017





The scale of the global challenge is daunting. Poor fisheries management, combined with harmful subsidies which drive over-capacity, have left many stocks overfished. Although many international waters are overseen by Regional Fisheries Management Organisations (RFMOs), only vessels whose countries have signed up as members are bound by their regulations. Lack of effective governance – especially in countries with limited resources – means illegal, unreported and unregulated fishing (IUU) is having a serious impact on marine resources, particularly on small-scale fisheries in developing countries.

LOST LIVELIHOODS AND FOOD SECURITY

Ten percent of the world's population depends on the ocean for a readily accessible source of protein and employment. Some coastal communities depend directly on fish for food security¹², but many more rely on the income from fishing to sustain themselves and their families, with about 50 million people directly employed in the seafood sector⁷.

When overfishing of Canada's Grand Banks led to a complete collapse of the cod fishery at the end of the last century, over 35,000 fishers and plant workers from more than 400 coastal communities lost their jobs¹³. Although cod have now returned to the area, the ecology of the region has fundamentally changed, meaning their numbers are much lower¹⁴.

Illegal, unreported and unregulated (IUU) fishing is estimated to cost the global economy US\$10-23 billion each year¹⁵, and is jeopardising the livelihoods of fishing communities around the world^{16,17}: it has been estimated that cracking down on illegal fishing would create an extra 300,000 jobs in West Africa alone¹⁸.

Other research has suggested that millions of people in food-deficient countries could have avoided under-nourishment if fisheries were not overexploited and local resources unfairly allocated. For many coastal countries where nutrient intake is inadequate, marine catches could provide more than the dietary requirements for people living within 100km of the coast, with a fraction of current landings potentially transforming the situation for children – under-fives in particular¹⁹. Small-scale fisheries have been identified as making direct and indirect contributions to food security, as they make affordable fish available to local communities, as well as being key to sustaining livelihoods²⁰.

SUSTAINABLE FISHING AND NUTRITIOUS DIETS

Tackling overfishing is a 'win-win' for us and the planet. By conserving our rich marine resources, we will enable more people to have the protein they need to live healthily. Fisheries that are managed sustainably are also more productive in the long-term and, by providing a more stable food source, they are ensuring seafood will be available for future generations.

Latest estimates suggest we could be harvesting 16 million more tonnes of seafood each year if global fisheries were better managed²¹. Improving the management of fisheries will allow stocks and ecosystems to recover. This, in turn, increases the amount of fish that can be sustainably harvested in perpetuity.

16 million tonnes of seafood provide over 1.3 million tonnes of edible protein^{22,23,24}. The recommended daily intake of protein is 50g per person²⁵, equivalent to two small salmon fillets or four eggs, seven slices of bread or seven tablespoons of seed and nuts. With 1.3 million tonnes of edible protein then, a total of 26,500,000,000 daily portions of protein are being lost each year.

The lost protein is **enough to meet the needs of over 72 million people each year**²⁶ – equal to the rural population of the USA and Canada, or the entire population of the UK and Ireland, or the combined population of Côte d'Ivoire, Guinea, Liberia, Mauritania, Senegal and Sierra Leone in West Africa, or the combined population of Cambodia, Malaysia, Maldives, Sri Lanka and Timor-Leste in Asia, or more than twice the combined population of Australia and New Zealand.



MAKING SUSTAINABLE FISHING A GLOBAL REALITY

In recent years, more fisheries than ever before have been adopting sustainable fishing practises. Effective fisheries management²⁷ requires fisheries to follow international best practices for gear, for management procedures to have a solid scientific basis (such as robust ‘harvest control rules’), and for a scientific understanding of how different layers of the ocean food chain interact²⁸.



Goolwa pipis go from bait to restaurant plates

The South Australia pipi fishery first achieved MSC certification in 2008 and has become an impressive example of the benefits of sustainable output.

The pipi is a small clam-like bivalve that has provided Australians with sustenance since the Ngarrindjeri people first fished the Goolwa region thousands of years ago.

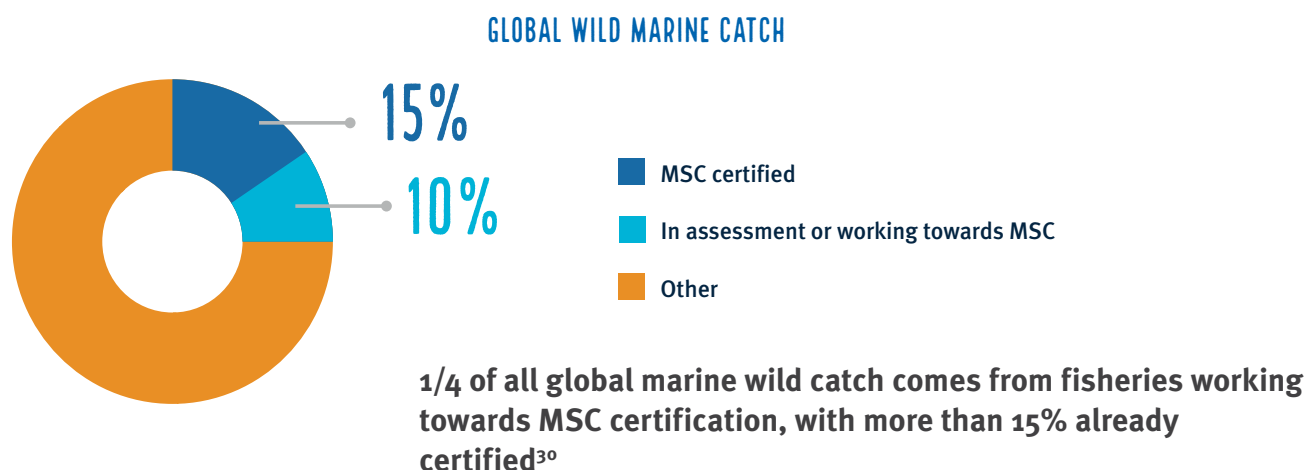
Once excessively harvested and under-appreciated, a fine balance has been struck between supply and demand, thanks to the constant analysis proffered by MSC certification and the tireless work of local experts.

Now, around 650 tonnes of pipis are processed and sold each year, primarily to local restaurants in South

Australia and as a coveted product across the Eastern Seaboard. Graduating from fishing bait to a delicacy, the sweet and juicy pipis are finally getting the culinary attention they deserve.

It is a testament to both the determination of the community-based fishery and the market innovation which has made the South Australian pipi a sought-after product.

The MSC's voluntary ecolabel and certification program recognises sustainable fishing practices, helping create a more sustainable seafood market. In 2020 there were 409 MSC certified fisheries around the world, with another 89 undergoing assessment²⁹. These included 62 small scale fisheries supporting the livelihoods of 80,000 people, and 70 fisheries from 26 countries in the Global South³⁰.



MSC certification is awarded by independent assessors. It requires strong evidence of healthy stocks, measures to protect ecosystems and reduce bycatch, and effective management. Many fisheries make significant improvements before entering MSC assessment but are required to make continuous improvements to maintain global best practice as set out in the MSC Fisheries Standard.

This growth in certified sustainable fisheries is driven, in part, by the increasing consumer demand for sustainably sourced food. More and more shoppers want to know that the products they buy are sustainably produced, with seafood consumers ranking sustainability as more important than price³⁰.



DELIVERING WIDER CHANGE

MSC certified fisheries are delivering far reaching changes that contribute to global progress. A recent MSC analysis showed that fisheries meeting the organisation's Fisheries Standard are also delivering on at least 34 different Sustainable Development Goal targets³¹, specifically supporting progress towards ending hunger (SDG 2) and securing the health of our oceans (SDG 14).

However, individual fisheries cannot deliver the change needed on their own. They also need the support of governments to ensure that catch limits are in line with scientific advice; that illegal, unregulated and unreported fishing is tackled; and that harmful subsidies which encourage overfishing around the world are eliminated. Governments need to prioritise the management of our oceans – because our future depends on them.

CONCLUSION

The extra protein gained by ending overfishing and properly managing our fish stocks could supplement the diets of millions of people around the world.

Fisheries across the globe are already demonstrating that fishing sustainably is not only achievable but more productive too, contributing to a food-secure future.

To accelerate this change, industry, retailers, governments, and consumers need to prioritise and support sustainably sourced seafood.



Pacific island nations take control of their fishery

Eight countries – known as the Parties to the Nauru Agreement, or PNA countries, after an accord they signed in 1982 – control an area of ocean 40% larger than the whole of Europe or the USA.

Within their territorial waters, or exclusive economic zones (EEZs),

live a quarter of the world's tuna, including half the global population of skipjack, the main species in canned tuna.

As the global appetite for tuna has soared over the last few decades, illegal and unsustainable fishing by foreign vessels has put tuna stocks under increasing pressure. Selling permits to fish in their EEZs is a major source of economic revenue – but it won't last if there are no fish left.

In 2010, the PNA countries decided it was time to take control of their fishery – on their own terms and reward sustainable fishing practices within their waters.

The PNA tuna fishery was certified as sustainable to the MSC Fisheries Standard in 2012 – making it the world's largest independently certified tuna supplier.



There is a race out there to fish for tuna. So I think it's about time we take ownership of our tuna resource. It's important for our future generations, it's important for our people, and it's important for our economic development."



**Mattlan Zachalan, Former Minister for
Resource and Development, Republic of the
Marshall Islands.**

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- ² [UN Sustainable Development Goals Report 2020](#)
- ³ [New Internationalist Hunger: the facts 2020](#)
- ⁴ [UN FAO State of Food Security and Nutrition in the World \(Sofi 2020\)](#)
- ⁵ [World Resources Institute \(2019\) Reducing food loss and waste](#), p5
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- ²⁰ [Committee on World Food \(2014\) Sustainable fisheries and aquaculture for food security and nutrition](#); p47
- ²¹ [PNAS 2016 113\(18\) 5125-5129](#); foregone yield
- ²² Only 82% of fish is used for human consumption²³ i.e. 13.1 million out of 16 million tonnes. And only 10% of a whole fish is edible protein²⁴ i.e. 1.3 million out of 13.1 million tonnes.
- ²³ [Nature \(2020\) DOI: 10.1038/s41586-020-2616-y](#)
- ²⁴ [UN FAO Yield and composition of fish \(accessed 20/10/2020\)](#): the mean proportion of a whole fish that is edible flesh is 56%, and the mean proportion of edible flesh that is protein is 18% (averaged across all documented species with confirmed data, unweighted by catch volume of each species) i.e. 10% of a whole fish (0.56x0.18=0.1) is edible protein.
- ²⁵ [US FDA nutritional recommendations \(accessed 20/10/2020\)](#): 50g of protein per person per day (equivalent to 18.25kg per person per year); recommendations from Public Health England, based on the European Food Safety Authority guideline of 0.83 g/kg of body weight, are similar (45-55g per day).
- ²⁶ 1.3 million tonnes (1,300,000,000kg) of edible protein provides 72 million portions of the recommended annual intake of 18.25kg protein²⁵.
- ²⁷ [PNAS 117 \(4\) 2218-2224 \(2020\)](#)
- ²⁸ [UN FAO Code of Conduct for Responsible Fisheries](#)
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