

BONDING WITH OBSERVERS

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Key Takeaways

- Fisheries observers are precious (they gather critical data used to assess and monitor fisheries), rare (one for every thousand motorised fishing vessels globally), and endangered (they can spot illegal activities and shockingly their death rate is high).
- Only 2% of global wild-catch volumes are monitored by observers, partly because of a lack of funding and where observation is permitted, rules can be manipulated.
- If just 1% (USD 222 million) of global 'harmful' fishery subsidies were redirected to increased monitoring, a 20% observer coverage rate could be reached, thus reducing illegal fishing and overfishing. The EU has a leading role to play in making this happen.
- Financial market participants should demand increased monitoring: growing demand for sustainability-linked loans, where increased monitoring at sea drives lower interest rates (an instrument recently issued by Thai Union), could ensure more sustainable fisheries and higher net profits. It's a double win for the investor.





At sea monitoring is a key prerequisite for greater sustainability in fisheries

The proportion of overfished fish stocks is at an all-time high.ⁱ For every five tonnes of fish caught by fishing companies globally, another two tonnes of marine animals are caught unintentionally.ⁱⁱ Up to one-third of global wild-catch volumes is either illegal, unreported or unregulated (IUU).ⁱⁱⁱ

These three major issues are hard to tackle under any circumstances but **are unsolvable without adequate monitoring of fisheries** globally. Gathering information on catch, bycatch, fishing effort and compliance with regulations is indeed key to securing the sustainability of fisheries. Such data are used for instance to set Maximum Sustainable Yields (MSY), which then guide decisions on fishing quotas. As a result, multiple fisheries are monitored at sea by observers (although not the majority).

One observer for every thousand motorised vessels: enough for the sustainability of fisheries?

Fisheries observers are independent specialists who work onboard commercial fishing vessels (or more rarely, in fish processing plants) and collect data on, for example, catch composition, discard and bycatch regulation compliance, and transshipment activities. Their work is critical because it permits the data to be externally verified.

Working as a fisheries observer: a crucial, but hard and dangerous job.

The tasks an observer is expected to carry out include:^{iv}

- Conducting pre-trip safety inspections;
- Communicating observer duties and data collection needs to vessel crew;
- Collecting operational information, such as trip costs (i.e. price of fuel, ice, etc.);
- Collecting fishing gear information;
- Collecting tow-by-tow information (i.e. depth, water temperature, wave height, vessel location and time when fishing begins and ends);
- Recording all kept and discarded catch data on observed hauls and kept catch on unobserved hauls (species, weight and disposition);
- Collecting actual catch weights, or weight estimates derived by sub-sampling;
- Collecting whole specimens, photos and biological samples;
- Recording information on interactions with protected species, such as sea turtles, porpoise, dolphins, whales and birds.

If done properly, their job can pit observers against hostile crew, especially if they detect activities such as illegal fishing. As a result, **independent fishery observers have one of the most dangerous jobs in the world.**^v Harassment and intimidation are common.^{vi}

Between 2010 and 2019, at least seven observers died or disappeared under suspicious circumstances.^{vii} As a proportion of the total number of observers, the implied annual death rate is greater than that of, say, policemen in the US.^{viii} Yet no RFMO includes regulations to sufficiently ensure the protection of fisheries observer rights and safety, and only four RFMOs (out of 17) mandate a specific process in the event that an observer disappears or dies.^{ix}



There are an estimated 2,500 observers worldwide,^x or about one for every thousand motorised fishing vessels globally.^{xi} Observer programmes exist both at the national level (such as in the US, Australia, New Zealand, Philippines or Portugal) or at the regional level, where they are under the authority of a regional fisheries management organisation (RFMO), such as in the Western and Central Pacific Ocean (WCPFC).^{xii} Observers are therefore employed by a government agency such as the NOAA (National Oceanic and Atmospheric Administration) in the US or by a RFMO, either directly or via a third party contractor.

Only 2% of global catch volumes are covered by fisheries observers via RFMOs

Currently only three out of eighteen RFMOs mandate 100% observer coverage on fishing vessels:

- CCBSP (walleye pollock in the Bering Sea),
- NAFO (multiple species including Atlantic cod in the Northwest Atlantic), and
- SEAFO (mostly perch-like fish in the Southeast Atlantic).^{xiii}

CCAMLR (toothfish and krill in the seas around Antarctica) also mandates close to 100% coverage (see note below Table 1). Together, these RFMOs (highlighted in green in Table 1 below) accounted for less than 4% of 2016 global catch volumes.^{1,xiv}

Partial coverage exists in several RFMOs such as in tuna RFMOs (WCPFC, ICCAT, IATTC, CCSBT or IOTC)^{xv} - see grey rows in Table 1. RFMOs where partial observation exists account for c.80% of global catch volumes.^{xvi} Observer coverage requirements are typically higher at purse seine vessels or bottom trawling vessels compared to longline vessels, mostly because the latter are smaller, meaning that space can become an issue.

Lastly, six RFMOs (highlighted in orange in Table 1 below) do not require observers.^{xvii}

Table 1: Proportion of Observer Coverage Mandated by Regional Fisheries Management Organisations (RFMO - full coverage in green, partial in grey, no coverage in orange, ranked by proportion of global catch, 2020).^{xviii}

RFMO	RFMO name	Proportion of global wild catch*	Observer coverage rate on fishing vessels (mandated)	Proportion of managed catch with observers	Proportion of total RFMO catch with observers
Total (all RFMOs)				15.4%	2.3%
WCPFC	Western and Central Pacific Fisheries Commission	45.3%	5% for longline vessels, 100% for purse seine vessels	15.9%	2.2%
ICCAT	International Commission for the Conservation of Atlantic Tunas	29.2%	20% bluefin tuna longlines, 100% bluefin tuna purse seines, 5% Mediterranean swordfish longlines	1.1%	<0.1%
IOTC	Indian Ocean Tuna Commission	14.1%	5%	5.0%	1.2%
NASCO	North Atlantic Salmon Conservation Organization	10.8%	0%	0.0%	0.0%
IATTC	Inter-American Tropical Tuna Commission	9.6%	5% for longline vessels, 100% for purse seines, 100% in Antigua area	54.0%	7.7%
NEAFC	North East Atlantic Fisheries Commission	7.6%	Exploratory bottom fishing only	0.9%	0.5%
CCSBT	Commission for the Conservation of Southern Bluefin Tuna	3.9%	10%	10.0%	0.1%

¹ Also including catch volumes of species not managed by these RFMOs but taking place in the RFMO area



RFMO	RFMO name	Proportion of global wild catch**	Observer coverage rate on fishing vessels (mandated)	Proportion of managed catch with observers	Proportion of total RFMO catch with observers
Total (all RFMOs)				15.4%	2.3%
IPHC	International Pacific Halibut Commission	3.1%	Around 20 vessels	2.0%	<0.1%
GFCM	General Fisheries Commission for the Mediterranean	2.4%	0%	0.0%	0.0%
NAFO	Northwest Atlantic Fisheries Organization	2.3%	100%	100.0%	14.5%
SPRFMO	South Pacific Regional Fisheries Management Organization	1.2%	5% for jumbo flying squid, 10% for bottom-longline and jack mackerel, and 100% for bottom trawl and exploratory	3.0%	2.0%
RECOFI	Regional Commission for Fisheries	1.0%	0%	0.0%	0.0%
CCBSP	Convention on the Conservation and Management of the Pollock Resources in the Central Bering Sea	0.9%	100%	100.0%	50.7%
PSC	Pacific Salmon Commission	0.5%	0%	0.0%	0.0%
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources	0.3%	100% for toothfish and krill**	99.7%	98.5%
SIOFA	South Indian Ocean Fisheries Agreement	0.2%	100% for bottom trawlers, 20% for other bottom fishing gear	0.2%	0.1%
NPAFC	North Pacific Anadromous Fish Commission	0.1%	0%	0.0%	0.0%
SEAFO	South East Atlantic Fisheries Organization	0.1%	100%	100.0%	0.0%

* 2016 data. Catch of all species, not only those managed by RFMOs. Because some RFMOs overlap and because RFMOs only manage some fish species, there is double-counting of catch volumes not managed by RFMOs, hence the total exceeds 100%.

** The mandated coverage rate is 99.7% in the CCAMLR (not 100%) since no coverage is mandated for mackerel icefish, another species managed by CCAMLR but for which wild-catch volumes are relatively low.^{xix}

However, many species caught within a RFMO area are not actually managed by that RFMO (e.g. the CCSBT only manages southern bluefin tuna but pilchard, hake, anchovy or squid are also fished in this area).^{xx}

Focusing only on the species managed by each RFMO (equivalent to 15% of total RFMO volumes), we compute that overall, **fisheries observers cover 15% of the catch volumes of species managed by RFMOs globally** - see Total row in Table 1 above.^{xxi}

That means that **only 2%** (15% of 15%) **of global catch volumes are covered by observers**. The real proportion is likely to be even lower since observers do not control 100% of the catch and rules around observers' coverage might not be fully enforced everywhere.

To accurately evaluate bycatch (and thus improve the sustainability of fisheries), it was estimated that at least 20% observer coverage (for common species) and 50% observer coverage (for rare species) would be necessary.^{xxii} What would it take to increase observer coverage from 15% of managed species to 20% or even 50%?



An additional USD 222 million a year is required to target 20% observer coverage in each RFMO

Assuming average costs of \$400 per observer day (based on the average of multiple sources),^{xxiii,xxiv} we estimate that the current cost of all observer programmes globally is in the order of USD 300 million per year. This cost is covered mostly by RFMOs and fisheries management authorities of the US, Australia, New Zealand and Portugal, the countries where a fisheries observer programme exists,^{xxv} often via a contractor such as MRAG (Marine Resources Assessment Group²). These costs are then typically charged back to the fishing industry, for instance through a fee charged on the value of fish landings (e.g. 1.65% of ex-vessel value of landed catch for the US North Pacific observers programme).^{xxvi}

Put differently, it costs an estimated USD 300 million every year to ensure that fisheries observers monitor 2% of global catch volumes (15% of the catch managed by RFMOs, or 3.2 million tonnes).

To reach at least 20% observer coverage on the catch managed by every RFMO would require an estimated additional USD 222 million a year (USD 735 million for a 50% coverage) assuming a similar observer cost per tonne of catch monitored as previously mentioned.^{xxvii}

NEAFC, WCPFC, IOTC and GFCM would require the largest additional contributions - see Figure 1.

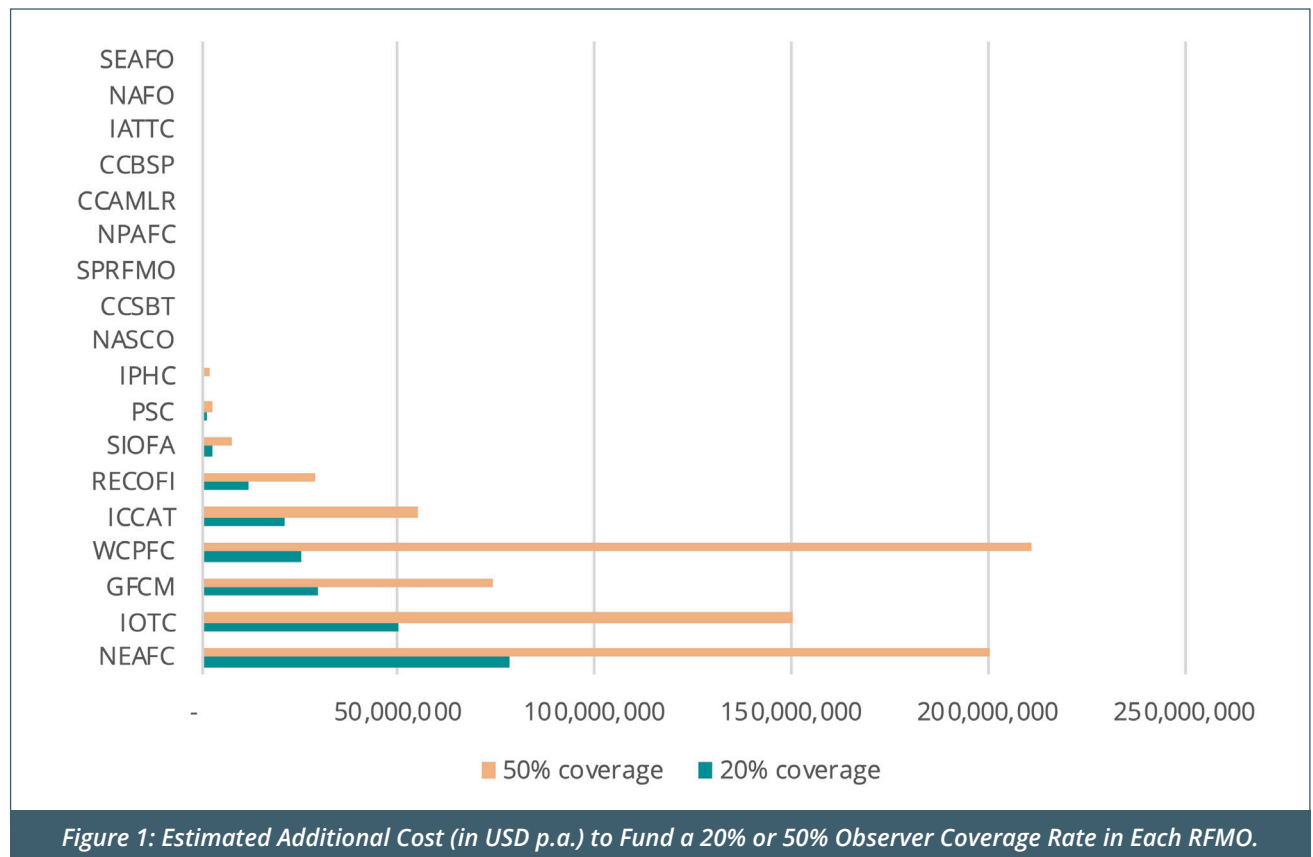


Figure 1: Estimated Additional Cost (in USD p.a.) to Fund a 20% or 50% Observer Coverage Rate in Each RFMO.

² <https://mrag.co.uk/>



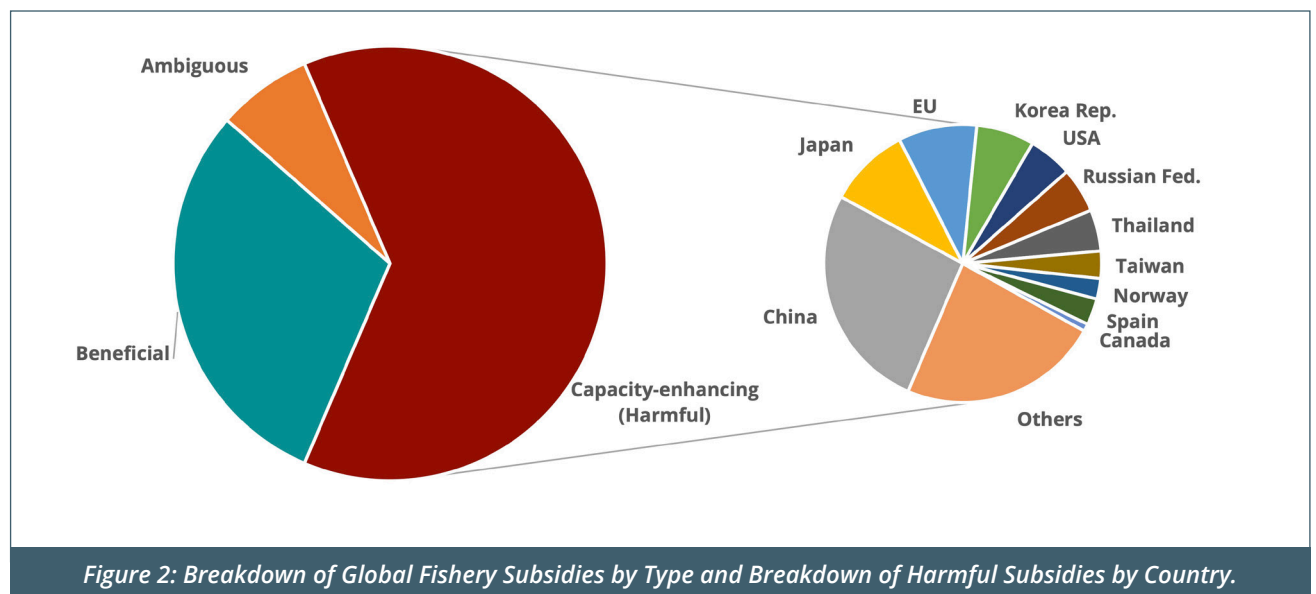
There is, however, a major issue. RFMOs' budgets are too low to cover such an additional increase. For instance, we compute that the additional USD 50 million required at the IOTC level to reach a 20% coverage is c. 11 times the amount of the IOTC's total budget.^{xxviii} For the WCPFC, that proportion would be c. 3 times.^{xxix} In short, **there is not enough funding at RFMO level to significantly increase observer coverage.** Yet because RFMOs are funded by their member countries, the latter can, in theory, increase their funding.

Redirecting 1% of global 'harmful' fishery subsidies could fund a 20% observer coverage rate

Governments across the world spend USD 35 billion on capacity-enhancing fisheries subsidies every year. Out of these, USD 22 billion are capacity-enhancing subsidies, often called harmful subsidies,^{xxx} because by funding fuel or vessel construction, for instance, they allow fishing companies and their vessels to travel further, stay at sea longer and take in more fish than they could normally afford to if they were not subsidised.

If only 1% of these harmful subsidies were redirected to fund fisheries observer programmes, the proportion of global catch covered by fisheries observers could rise to 20% without charging higher fees on the fishing industry. To reach a 50% coverage, 3% of the harmful subsidies would need to be redirected.^{xxxi}

China, Japan, the EU, South Korea, Russia and the US are the biggest sources of capacity-enhancing fishery subsidies - see Figure 2. ^{xxxii}



Within these six entities, the EU is a contracting party of most of the RFMOs where increasing coverage would cost the most – see Table 2.



Table 2: Status of China, Japan, the EU, Russia, South Korea and the US as Contracting Parties (Members) of RFMOs Where Increased Observer Coverage Would Require Significant Extra Funding.

RFMO	China	Japan	EU	Russia	South Korea	US
NEAFC	-	-	Member	Member	-	-
IOTC	-	Member	Member	-	Member	-
GFCM	-	-	Member	-	-	-
WCPFC	Member	Member	Member	-	Member	Member
ICCAT	Member	Member	Member	Member	Member	Member
RECOFI	-	-	-	-	-	-
SIOFA	-	Member	Member	-	Member	-
PSC	-	-	-	-	-	Member
IPHC	-	-	-	-	-	Member

The EU therefore has a key role to play to help fund higher monitoring of the seas.

Could the new EU fisheries control regulation inspire RFMOs?

In March 2021, the European Parliament adopted its position on the fisheries control regulation. A series of measures to increase monitoring of the EU fleet was voted, including mandatory use of CCTV to carry out checks on landing obligations for a “minimum percentage” of vessels longer than 12 meters and identified as “posing a serious risk of non-compliance”.^{xxxiii} Other measures include:

- Mandatory traceability from point of catch to point of retail for all seafood products, whether produced in the EU or imported.
- All EU fishing vessels (including the smaller ones) will be required to carry a location tracker and to report their catches.
- On the negative, an increase in the margin of error fishers have to estimate their catch means up to 40% of caught seafood can go missing from the EU fleet’s records.

The European Parliament, EU member states, and the European Commission are now due to negotiate in order to finalize the future fisheries control this summer. The fishing industry will then have four years to implement the agreed measures.^{xxxiv}

Will increase monitoring requirements for the EU fleet incentivise higher monitoring at RFMOs where the EU is a member? And will the devil be in the details, for instance with compromises made on the definition of what an observer-day is (e.g. when observers are hired for a night shift when little fishing takes place), or trade-offs between increased monitoring requirements and lower reporting requirements?

Our previous analysis of control technologies in the EU revealed that **only 42% of large vessels complied with existing regulations**. Planet Tracker will closely watch that space.



Complementing fisheries observers with electronic monitoring

Electronic monitoring involves a combination of video cameras that record gear hauling and gear setting, hydraulic and drum-rotation sensors that monitor gear usage and vessel monitoring systems that track the vessel's route.^{xxxv}

A complementary approach using both electronic monitoring (to lower the costs)^{xxxvi} and fisheries observers (used in the cases where electronic monitoring is less reliable) is likely to be the way forward, although of course the adequacy and cost of each type of monitoring (electronic or human) is case-specific.

RFMOs are well placed to mandate comprehensive, independent and transparent monitoring coverage on commercial fishing vessels by using a combination of observers and electronic monitoring. Yet for now:

- No RFMO mandates 100% at sea monitoring using electronic monitoring, and only three RFMOs (ICCAT, NAFO and SIOFA)^{xxxvii} have an electronic monitoring policy.
- No RFMO requires penalties for disruption of electronic monitoring coverage.
- No RFMO has a system in place to review electronic monitoring footage.
- No RFMO mandates full transparency of either human observer or remote electronic monitoring data.^{xxxviii}

One of the key challenges preventing further widespread electronic monitoring devices is the lack of consistent standards: because many high-seas vessels fish in several jurisdictions, differences in the way information is collected limit the efficiency and effectiveness of electronic monitoring systems. These systems also require basic maintenance by the crew (e.g. are camera lenses clean?) and cannot collect biological samples, contrary to human observers.

Can RFMOs agree on higher at sea monitoring?

Divergent interests within RFMO members often block any progress. For instance, Ecuador proposed in February 2021 that the giant squid fleet within the SPRFMO (South Pacific) should rise to 100% observer coverage by 2026 and that transshipment of that species be banned at sea. This came after 260 Chinese-flagged squid-fishing vessels were spotted just outside Ecuador's EEZ in July 2020 - see our blog: *Subsidies, Distant-water fleets and the Galápagos (SDG)*. China, South Korea and Taiwan "fiercely opposed" both proposals, which were not adopted.^{xxxix}

Financial instruments can be designed to incentivise greater monitoring

If public organisations fail to improve at sea monitoring, could the fishing industry itself ask for more monitoring? There is precedent: in 2018, a group of 118 organisations including seafood companies appealed for greater monitoring at tuna RFMOs.^{xl} More recently (in February 2021), a large seafood company listed in Thailand went further.

Thai Union, the owner of brands such as Chicken of the Sea, John West or Petit Navire, aims to ensure that 95% of its suppliers use electronic monitoring or human observers by 2025.^{xli} In an astute move, the company recently issued a sustainability-linked loan where the interest rate will be linked to sustainability indicators, with achievement leading to the borrower being rewarded with a reduction in interest rates.^{xlii}

One of these indicators is: *number of tuna vessels fishing in international waters supplying to Thai Union with electronic monitoring installed or human observers onboard as a percent of the total number of tuna vessels fishing in international waters supplying to Thai Union.*^{xliii}



Although we note that the targets are only for international waters, this initiative should be applauded and encouraged:

- By linking the cost of its debt to achievement of monitoring targets (which will be verified by The Nature Conservancy^{xliv}), Thai Union effectively creates for itself an incentive to push for more monitoring.
- There is strong demand among investors for sustainability-linked loans: Thai Union's bond was more than twice oversubscribed and Credit Suisse's Chief Sustainability Officer highlighted in February 2021 that sustainability-linked loans (or bonds) were in high demand.^{xlv} USD 8.8 billion of sustainability-linked bonds were issued in 2020 and USD 20-25 billion are expected for 2021.^{xlvi} Planet Tracker previously wrote about the benefits of these instruments in the textile sector.

We therefore recommend that other large seafood companies take notice and use similar initiatives that lead to increased at-sea monitoring, which would both improve their sustainability credentials and their bottom lines.

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