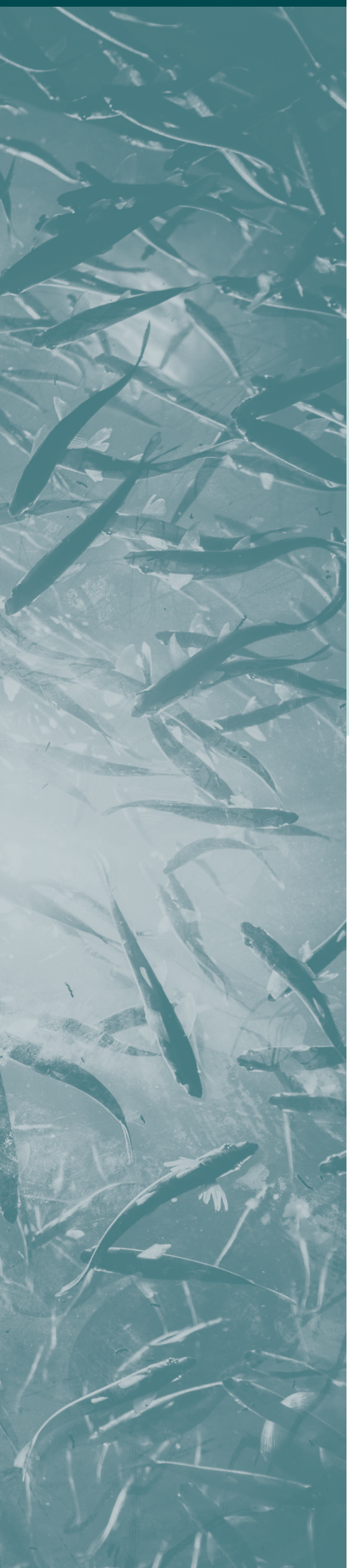
Future Fisheries Management
Issue Brief



The WTO Needs to Impose Transparency Requirements for Fishing Subsidies

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SUMMARY This policy brief underscores the urgent need for the World Trade Organization to enhance transparency related to fishing subsidies. The World Trade Organization's 2022 Agreement on Fisheries Subsidies targets the harmful subsidies that motivate destructive fishing practices, but its success hinges on access to information crucial for evaluating compliance. Unfortunately, confidentiality and trade secrecy laws have contributed to a lack of transparency across the fishing sector. Lack of access to information hinders monitoring efforts and enables illegal fishing to persist. The World Trade Organization should promote data accessibility by means of technology while calling for international collaboration to dismantle data silos. Specifically, it should impose discrete transparency requirements on vessels that receive subsidies. This would help to combat illegal fishing and to ensure the sustainability of global fisheries.

During its 12th Ministerial Conference in June 2022, the World Trade Organization (WTO) decided to adopt the Agreement on Fisheries Subsidies. This decision represents a significant step toward addressing activities that contribute to destructive fishing practices and overfishing globally. The agreement is the culmination of more than 20 years of discussion since its introduction at the 2001 Doha Ministerial Conference, and it acknowledges the myriad negative ecological and economic consequences that extend from harmful fishing subsidies.

Articles 3, 4, and 5 of the agreement contain provisions intended to restrict harmful subsidies that enable illegal, unreported, and unregulated (IUU) fishing; fishing of overfished stocks; and fishing of unmanaged stocks on the high seas. But an estimated $22 billion a year in subsidies create substantial perverse incentives that threaten to undermine these provisions.[1] Thus, to successfully implement them, the WTO must consider measures that ensure that the provisions are robust in their application.

The WTO will be able to act on articles 3, 4, and 5 only if there is enough information available to determine whether specific subsidies are problematic. The Agreement on

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Fisheries Subsidies includes provisions that are meant to improve transparency, but these rely primarily on information provided by the very states whose subsidies could be under scrutiny. The agreement also allows coastal states to determine whether IUU fishing is taking place in their own waters. Beyond encouraging bilateral information-sharing between parties, the agreement offers little in the way of independent verification of states' claims.[2] Moreover, although the stated objective of the provisions in articles 3, 4, and 5 is to ensure that minimum evidence-based and procedural requirements are met, this implies that evidence or information is available in the first place to assess a claim of triggering a prohibition under the articles. However, fisheries information generally remains siloed with national, regional, and international authorities subject to various data-sharing restrictions and nondisclosure laws or regulations that aim to protect "confidential business information" or "industry trade secrets." Indeed, the agreement itself acknowledges the priority of these confidentiality provisions.[3]

The difficulty of obtaining independently verifiable information about fisheries threatens to significantly diminish the promise of the Agreement on Fisheries Subsidies. Until such information is transparent and accessible, there will be no way to hold flag states, companies, and vessels accountable under articles 3, 4, and 5. This issue brief proposes that, if subsidies remain available—as recommended under the current agreement—recipients of these subsidies should be subject to increased scrutiny and more rigorous transparency requirements.

INVESTING IN THE FUTURE OF FISH

In the spirit of the WTO's objective to use trade as a way to raise living standards, create jobs, and improve people's lives, it is helpful to think of fishing by analogy to a key component of successful global trade: banking. Proper fisheries management is like simple accounting on an interest-bearing bank account. The manager of an investment account seeks to ensure that joint account holders withdraw only the interest on a particular interest-bearing account and avoid digging into the principal. This way, the account will continue to generate a certain level of interest in perpetuity. In the same way, fisheries management seeks to ensure that fishers extract only the surplus production of a particular fish stock and avoid disturbing the minimum viable spawning stock. This will ensure that the fish stock continues to produce a certain level of harvestable surplus in perpetuity.

Certain factors are always beyond the control of an investment account manager, such as variable interest rates, which can be compared to interannual variability in a fish stock's reproduction. To account for this variability, an investment account manager might recommend a maximum annual total withdrawal from the account, setting this recommendation at a conservative level to ensure that joint account holders minimize the risk of digging into the principal and thereby reducing their long-term annual return. This concept is analogous to the idea of *maximum sustainable yield* in fisheries.[4]

Going back to the banking example, imagine that the joint account holders are acting responsibly, reporting regularly, and coordinating with each other to establish rules and procedures to ensure that they are not withdrawing more than the interest on the account. But there's a problem: an unauthorized

party—maybe a hacker, maybe one of the joint account holders gone rogue—is siphoning off funds from the account without the knowledge of the account manager or anyone else. This rogue actor is unable or unwilling to take everything in the account all at once but does manage to withdraw enough that the decline in the account balance becomes evident over time. The principal is being depleted.

If no one takes action against the nefarious actor who is surreptitiously withdrawing funds, the account will eventually be drawn down to the point that it no longer carries enough principal to produce any interest. This scenario is analogous to a fishery collapse. It represents how IUU fishing undermines effective fisheries management and poses a threat to sustainable, well-managed fisheries around the globe.

According to the United Nations Food and Agriculture Organization (FAO), approximately 90 percent of the world's fisheries are fully exploited or overexploited, which means that they can't accommodate any more legal fishing, much less illegal fishing.[5] Meanwhile, a rapidly rising global demand for seafood is driving the low-risk, high-reward practice of IUU fishing. The threat of IUU fishing extends well beyond its direct impact on the target fish stock. Besides damaging the ecological health of the ocean and the resources within it,[6] IUU fishing jeopardizes threatened and endangered species, coastal livelihoods, food and economic security, and even maritime security.[7]

IUU fishing directly harms legitimate fishing activities and unfairly maligns the reputations of responsible fishing companies and governing authorities. It also has connections to transnational crime, contributes to human rights and labor rights violations, distorts global seafood markets, and generally undermines efforts toward sustainable fisheries management.[8] When these effects are compounded by changes in fisheries distribution and abundance expected as a result of climate change, IUU fishing represents a tangible and imminent threat to the well-being of many fisheries-dependent developing states.[9] Insult is added to injury done to these developing states, many of which suffer the most acute impacts of climate change, when their unsubsidized domestic fleets must compete with heavily subsidized *distant water fishing nations* (DWFN), leading to a war of attrition in which the DWFN ultimately drive the competition—that is, the domestic fleets—out of business.[10]

For all these reasons, IUU fishing very simply amounts to theft of the wealth of developing states—as if someone broke into a bank vault and sped away with bags full of money. The only difference in the case of IUU fishing is that the theft is conducted by heavily subsidized DWFN vessels whose flag states have effectively provided all the resources necessary to execute the heist.

HOW TO EMPOWER OUR FISHING "INVESTMENT MANAGERS"

Proper management of our global fisheries relies on coordination across a tapestry of national, regional, and international governance bodies. Efforts to achieve cooperation typically result in the formation of *regional fisheries management organizations* (or *regional fisheries management arrangements*). Politics and commercial pressures influence every decision made by fisheries management authorities: as such pressures increase, management decisions tend to become less connected to science or verifiable

evidence. Indeed, overfished stocks are currently present in the areas overseen by several such organizations. Nonetheless, it would be too simplistic to blame the fisheries managers for failing to do their jobs. The fact is, they often lack enough information to make appropriate decisions.

The fishing industry has long insisted that most harvest information be classified by default as commercially sensitive or trade secret. Suppressing this information obstructs or prevents the efficient and adequate scientific study and monitoring of fisheries as well as the enforcement of management decisions.[11] It is important to recognize, however, that the commercial fishing industry relies on much intelligence and information gathered by public institutions using public funds. This includes information about weather, oceanographic conditions, bathymetry, fish stock assessments and models, habitat models, and other sources to target and prosecute various fisheries. For instance, the fishing industry uses everything from satellite data on sea surface temperature to information on chlorophyll concentrations to identify where target species might be concentrated.[12]

Most fisheries are also subject to management, regulation, and enforcement that are overwhelmingly supported by public institutions backed by public funding and that aim to maintain the sustainability of those fisheries.[13] Globally, various government institutions contribute to the science and information that the fishing industry uses today: their contributions include bathymetric data compiled by the world's navies[14] and sea-surface data collected and compiled by NASA.[15] For example, because of the high granularity of data available to public institutions, in many areas the remotest depths of the ocean have been mapped—with high accuracy—to a precision that includes features as small as a square meter. These maps are all available to the public.[16] Thus, not only does the fishing industry rely on information generated by public institutions using public funds, but fisheries sustainability relies on management and monitoring provided by publicly funded institutions. If the public is paying for all this, you would think people would want to know what they are buying, especially given the state of global fisheries.

But the issue is not just about who pays for the foundational information that makes sustainable fisheries possible, it is also about what the public can already see with existing technology and will soon be able to see thanks to emerging technologies. Fishing activity is visible to multiple publicly accessible, satellite-enabled remote sensing systems. These include the AIS (Automated Identification System),[17] the LRIT (Long-Range Identification and Tracking) system,[18] SAR (synthetic aperture radar),[19] the VIIRS (Visible Infrared Imaging Radiometer Suite),[20] and optical sensing.[21] Fishing activity is also detectable by other methods, including radar harvesting,[22] monitoring SSB or VHF radio signals, and even simple visual observation. Moreover, individual fishing vessels can frequently see where other fishers are operating. At times they even collaborate, sharing information about certain target species.[23]

Taking into account all the technology available for data-gathering and all the information about fisheries that is shared voluntarily, one can reasonably assert that nothing that happens on the surface of the ocean is secret anymore and yet the fishing industry continues to default toward maintaining fisheries information, such as vessel position, as commercially sensitive, forcing public institutions like nongovernmental organizations (NGOs) to spend unnecessary amounts of money to secure information that should be publicly available in the first place.[24] The time, energy, and money that public institutions have

committed to the management and sustainability of fisheries, the existing and increasing level of transparency inherent in fishing operations owing to technology, and the fact that the information used by the fishing industry is wholly dependent on publicly available sources and funding raises a question: Why does the fishing industry insist that information be maintained as commercially sensitive or trade-secret data? Locking away fisheries data in a black box—or filtering data and releasing only certain types or limited amounts, and only at the discretion of the industry and under dubious and arbitrary legal distinctions—restricts access to information that rightfully belongs to the public. By restricting public access to this critical information, government and industry interests prevent independent verification and validation of data used to make prudent fisheries management decisions, inhibit adequate data sharing in high seas fisheries management contexts, hinder the detection of IUU fishing, and, ultimately, prevent the fishing industry from being held fully accountable for the impact it is having on the environment.

In short, fisheries are a public resource, managed using public funds and intended to be managed by their respective government management authorities in the public interest. Therefore, fisheries data should be publicly accessible by default. When the fishing industry might have legitimate reasons to call certain data commercially sensitive, it should be required to prove this claim in an open and transparent process. Such a claim should be subject to even more scrutiny when fishing is subsidized.

PROPERLY BALANCING THE LEDGERS

If the WTO genuinely seeks to address IUU fishing, overfishing, and fishing unmanaged high seas stocks—ultimately, the entities that are unlawfully withdrawing "funds" (in the form of fish) from the "joint investment accounts" that are our global fisheries—then the WTO must take steps toward greater accessibility to and transparency of fisheries data as part of implementing the Agreement on Fisheries Subsidies.[25] Additionally, the WTO should apply special scrutiny to subsidies for high-risk IUU practices such as transferring fish from a fishing vessel to a carrier vessel, a practice commonly known as transshipment, as a "fishing related activity" by imposing stricter monitoring and reporting requirements on the entities that benefit from these subsidies.[26]

Technologies that already exist, including electronic reporting, satellite tracking, and cameras on vessels, can provide near-real-time data on fisheries. These data can be used to increase the accountability of the fishing industry and to improve decision-making by authorities. Therefore, where requirements for electronic data collection tools are not already in place, the WTO should condition subsidies on the application and continuous operation of existing technologies, including the following:

- electronic reporting
- VMS (vessel monitoring systems)
- the AIS (Automated Identification System)
- 100 percent monitoring of all at-sea fishing activity through fisheries observer coverage via electronic monitoring (or human observers)

These tools will become more powerful with applications of artificial intelligence and, very soon, universal satellite internet connectivity via systems such as Starlink. Furthermore, using emerging technology tools such as blockchain to improve supply chain transparency and traceability[27] will strengthen the incentives pushing the fishing industry toward data transparency as financial institutions and markets seek to reduce their risk exposure and begin to refuse to support businesses that decline to adopt transparency policies and tools or are otherwise identified as at high risk of engaging in illegal or unethical fishing practices.[28]

Even the best technological solutions will be rendered impotent, however, if information remains siloed in various jurisdictions and if authorities remain subject to restrictive data-sharing arrangements and nondisclosure laws or regulations. Thus, transitioning fisheries to a transparent model of data accessibility—one that applies the best available technology and recognizes public availability as a default—would be transformative. This would provide decision-makers with the best information available and would enable fisheries managers to hold the fishing industry accountable. As an initial step, the WTO should help catalyze momentum toward a broader transparency initiative by requiring greater transparency from vessels seeking subsidies.

ABOUT THE AUTHOR

Bubba Cook has spent a lifetime on the ocean working in fisheries. He began his career in the US Navy. Troubled by fishery declines he observed around the world, he secured a BS in fisheries and a JD in environmental law before joining the US National Marine Fisheries Service in Alaska. He later worked for the World Wildlife Fund's Arctic Programme, working across Russia and Alaska. In 2010, he joined the US Peace Corps in Fiji as a conservation specialist. Since 2012, he has served as the Western and Central Pacific Tuna Programme Manager for the World Wildlife Fund, working out of New Zealand, where he supports sustainable tuna fishing by utilizing policy improvements, market tools, and technological innovation.

ABOUT THE SERIES

This issue brief is part of an ongoing conversation that began at an interdisciplinary workshop, "New Frameworks for Troubled Times: A Focus on the Global Fisheries Commons" (June 15–16, 2023), cohosted by the Mercatus Center at George Mason University and the Center for Governance and Markets at the University of Pittsburgh. The views expressed in it are the author's own and do not represent official positions of the Mercatus Center, the Center for Governance and Markets, or their affiliated universities.

NOTES

1. U. Rashid Sumaila et al., "Updated Estimates and Analysis of Global Fisheries Subsidies," *Marine Policy* 109 (2019): 103695, https://doi.org/10.1016/j.marpol.2019.103695.
2. World Trade Organization (WTO), Agreement on Fisheries Subsidies, June 22, 2022, art. 8, https://www.wto.org/english/tratop_e/rulesneg_e/fish_e/fish_e.htm.
3. "Nothing in this Article requires the provision of confidential information." WTO, Agreement on Fisheries Subsidies, art. 8, ¶ 8.8.

4. M. N. Maunder, "Maximum Sustainable Yield," *Encyclopedia of Ecology*, 2008, https://doi.org/10.1016/B978-008045405-4.00522-X. *Maximum sustainable yield* is defined as the maximum catch that can be removed from a population over an indefinite period. The concept relies on the surplus production generated by a population that is depleted below its environmental carrying capacity.
5. Food and Agriculture Organization of the United Nations, *The State of World Fisheries and Aquaculture 2022: Towards Blue Transformation* (Rome: Food and Agriculture Organization of the United Nations, 2022), 46–7, fig. 23, https://doi.org/10.4060/cc0461en.
6. Andrew J. Temple et al., "Illegal, Unregulated and Unreported Fishing Impacts: A Systematic Review of Evidence and Proposed Future Agenda," *Marine Policy* 139 (2022): 105033, https://doi.org/10.1016/j.marpol.2022.105033.
7. Robert Pomeroy et al., "Drivers and Impacts of Fisheries Scarcity, Competition, and Conflict on Maritime Security," *Marine Policy* 67 (2016): 94–104, https://doi.org/10.1016/j.marpol.2016.01.005.
8. Patrick Vrancken et al., "Introduction and Overview: Transnational Organised Fisheries Crime," *Marine Policy* 105 (2019): 116–22, https://doi.org/10.1016/j.marpol.2018.12.016.
9. Johann D. Bell et al., "Pathways to Sustaining Tuna-Dependent Pacific Island Economies during Climate Change," *Nature Sustainability* 4 (2021): 900–10, https://doi.org/10.1038/s41893-021-00745-z.
10. See, e.g., Miren Gutiérrez et al., "China's Distant-Water Fishing Fleet: Scale, Impact and Governance" (report, ODI, London, June 2020), https://doi.org/10.13140/RG.2.2.19265.17762.
11. See Dyhia Belhabib and Philippe Le Billon, "Fish Crimes in the Global Oceans," *Science Advances* 8, no. 12 (2022), https://doi.org/10.1126/sciadv.abj1927. See also H. Hinz et al., "Confidentiality over Fishing Effort Data Threatens Science and Management Progress," *Fish and Fisheries* 14 (2013): 110–17, https://doi.org/10.1111/j.1467-2979.2012.00475.x.
12. See, e.g., Kuo-Wei Lan et al., "Using Remote-Sensing Environmental and Fishery Data to Map Potential Yellowfin Tuna Habitats in the Tropical Pacific Ocean," *Remote Sensing* 9, no. 5 (2017): 444, https://doi.org/10.3390/rs9050444.
13. Paul Wallis and Ola Flaaten, "Fisheries Management Costs: Concepts and Studies" (Organisation for Economic Co-operation and Development, 2001), https://www.oecd.org/greengrowth/fisheries/1917868.pdf. In most countries that are part of the Organisation for Economic Co-operation and Development, all the costs of fisheries services are funded out of general tax revenues.
14. Heidi M. Dierssen and Albert E. Theberge Jr., "Bathymetry: History of Seafloor Mapping," in *Encyclopedia of Natural Resources* (2014).
15. NASA Jet Propulsion Laboratory, "Ocean Surface Topography from Space," accessed September 8, 2023, https://sealevel.jpl.nasa.gov/.
16. "Since 1903 GEBCO aims to provide the most publicly available bathymetry data sets for the world's oceans." General Bathymetric Chart of the Oceans home page, accessed September 8, 2023, https://www.gebco.net/.
17. International Maritime Organization, "AIS Transponders," accessed September 8, 2023, https://www.imo.org/en/OurWork/Safety/Pages/AIS.aspx.
18. International Maritime Organization, "Long-Range Identification and Tracking (LRIT)," accessed September 8, 2023, https://www.imo.org/en/OurWork/Safety/Pages/LRIT.aspx.
19. NASA, "What Is Synthetic Aperture Radar?," accessed September 8, 2023, https://www.earthdata.nasa.gov/learn/backgrounders/what-is-sar.
20. NASA, "Visible Infrared Imager-Radiometer Suite (VIIRS)," accessed September 8, 2023, https://www.earthdata.nasa.gov/sensors/viirs.
21. Bo Li et al., "Ship Detection and Classification from Optical Remote Sensing Images: A Survey," *Chinese Journal of Aeronautics* 34, no. 3 (2021): 145–63, https://doi.org/10.1016/j.cja.2020.09.022.
22. Commonwealth Scientific and Industrial Research Organisation, "Radar Harvesting," accessed September 8, 2023, https://research.csiro.au/iuu/case-studies/radar-harvesting/.
23. See Julia Calderwood et al., "An Evaluation of Information Sharing Schemes to Identify What Motivates Fishers to Share Catch Information," *ICES Journal of Marine Science* 80, no. 3 (April 2023): 556–77, https://doi.org/10.1093/icesjms/fsab252.

24. To put a finer point on it, the fishing industry often claims that the information they collect through VMS should be proprietary. We, as the public, can still see where they fish; we just have to spend a lot of money to analyze satellite data resources to prove it. We shouldn't have to go to those lengths, on the basis that it is all based on public information to start with. Thus, the information is only "suppressible" because the fishing industry and governments have decided to say it is, making it harder for the public to see what activities the fleets are up to in the pursuit of public resource.

25. See, e.g., "Shining a Light: The Need for Transparency across Distant Water Fishing" (Resources & Climate Report, Stimson Center, 2019), https://stimson.org/wp-content/files/file-attachments/Stimson%20Distant%20Water%20Fishing%20Report.pdf.

26. World Trade Organization, "Agreement on Fisheries Subsidies," art. 2, ¶ (c). See also Don Liddick, "The Dimensions of a Transnational Crime Problem: The Case of IUU Fishing," *Trends in Organized Crime* 17 (2014): 290–312, https://doi.org/10.1007/s12117-014-9228-6. Proceeds from illegal fishing are often laundered through complex networks of at-sea transshipment services and fraudulent catch documentation.

27. Shereen Ismail et al., "Toward an Intelligent Blockchain IoT-Enabled Fish Supply Chain: A Review and Conceptual Framework," *Sensors* 23, no. 11 (2023): 5136, https://doi.org/10.3390/s23115136.

28. Sara G. Lewis and Mariah Boyle, "The Expanding Role of Traceability in Seafood: Tools and Key Initiatives," *Journal of Food Science* 82 (2017): A13–A21, https://doi.org/10.1111/1750-3841.13743.