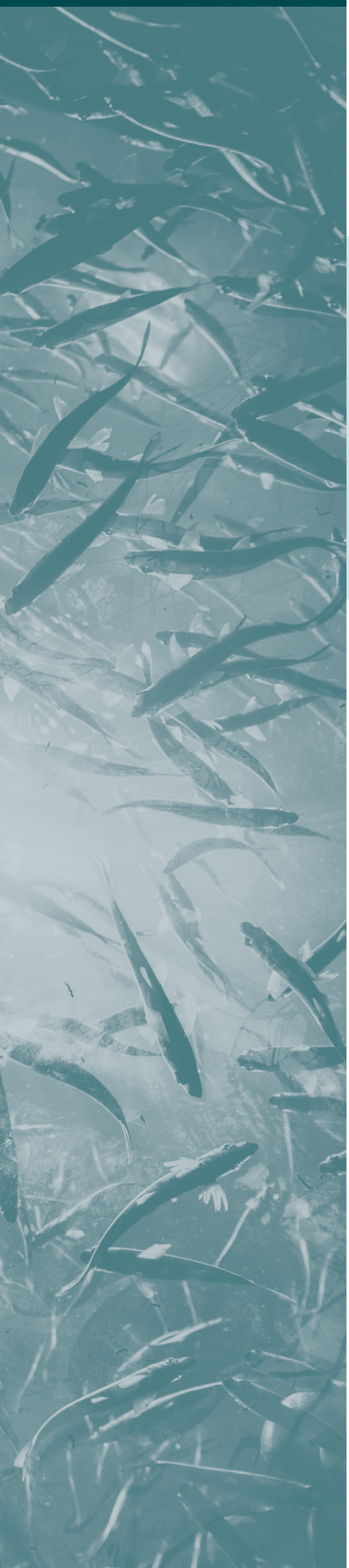
Future Fisheries Management Issue Brief



Elinor Ostrom on the High Seas

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October 2023

SUMMARY The $400 billion global fishing industry faces imminent threats from overexploitation, particularly on the high seas (areas beyond national jurisdiction). Elinor Ostrom's principles of commons governance offer valuable insights for addressing the crisis. Ostrom's ideas emphasize the importance of involving local communities in governance efforts, facilitating effective monitoring of fisheries, and fostering cooperation between local actors and regulators. Polycentric systems promote inclusive decision-making, which tends to result in workable solutions. Successful co-management models, which emphasize the need for collaboration between communities and regulators, offer ideas for developing more inclusive global frameworks to address the complex challenges of overfishing in the high seas.

Fishing is a $400 billion industry.[1] Despite the economic value of the world's fisheries, most of them are overexploited, threatened with overexploitation, or depleted. This is especially true of the high seas (areas beyond national jurisdiction), where illegal, unreported, and unregulated (IUU) fishing is a serious problem.

Fisheries management has seen important improvements over the past several decades while acknowledging the aforementioned challenges. This progress has been inspired by ideas and institutions that are strongly aligned with Elinor Ostrom's perspective on the governance of commons (shared resources that can be used by all in the absence of clearly defined property rights). In her 1990 book *Governing the Commons*, Ostrom showed that self-governance of commons can work, especially when the governance system satisfies a list of design principles that she and her colleagues discovered after examining hundreds of cases of efforts to self-manage commons.[2] *Self-governance* refers to a system in which the various local actors and local governing bodies have autonomy to jointly manage commons. It typically involves the cooperation of governments at various scales: international, national, subnational, and local.

What remains a question is how much Ostrom's ideas do inspire, and can inspire, governance of the high seas. Many of her ideas were worked out as she studied small, tight-knit communities.[3] They have also been applied to co-managed fisheries. *Co-management*

MERCATUS CENTER
George Mason University

Published in partnership with the
Center for Governance and Markets at the University of Pittsburgh

refers to a specific type of self-governing arrangement whereby local fishers collaborate among themselves, with local governments, and perhaps with higher levels of government to manage fisheries; it has typically been implemented in inshore fisheries or in fisheries within the exclusive economic zone (EEZ) of a nation. Other researchers who have followed Ostrom's lead in studying commons have likewise focused on small communities. For instance, anthropologist James Acheson has written extensively on the Maine lobster fishery, an example of a fishery in which individuals have formed harbor gangs to devise workable rules that enable them to overcome the tragedy of the commons.[4] Is an Ostromian perspective relevant to the challenges presented by overfishing in the high seas?

Ostrom's ideas are indeed relevant to the political economy of overfishing in the high seas for several reasons:

- Involving local communities at any scale of fisheries management facilitates monitoring and enforcement of social rules through *co-production*, which refers to shared participation in governance by public, nonprofit, and private actors for monitoring and enforcement.
- Involving local communities with government regulators in co-management schemes is important because it communicates local knowledge to fisheries managers—knowledge that they otherwise would not have.
- Increasing the ability to understand where sea creatures are (including the extremely mobile species such as tuna and squid) and increasing the scaffolding provided by international law and regional fisheries organizations each suggests improvement in the ability to define, to a reasonable degree, the boundaries of global fisheries at an increasingly global scale.

Each of these reasons also reflects the more general observation that the core ideas from studies of self-management at local scales have significance even for complex global challenges.[5] Ostrom's work is not only about community governance of commons; rather, it is a way of thinking about institutional arrangements to find workable solutions to complex social problems.

A central feature of an Ostromian approach is encouraging participation in shared governance of commons. Including local communities in the regulatory process can strengthen incentives to abide by rules and increase opportunities to use local knowledge. Thus, while open-ocean fisheries—those that lie in areas beyond national jurisdiction—present large-scale, complex social problems, the enduring lesson of Ostrom's work is to consider various institutional arrangements that (1) will align the incentives of the many actors who bear responsibility for the successful management of ocean fisheries, (2) will promote the communication of knowledge about these fisheries, (3) will be perceived as legitimate, and (4) will facilitate the co-production of monitoring and enforcement, even for areas of the ocean over which no government can claim sole authority.

ELINOR OSTROM'S INFLUENCE ON FISHERIES GOVERNANCE

One of Elinor Ostrom's contributions to the study of commons governance has been to show that there are many property rights arrangements that can lead to the long-term management of a resource. Characterizing resource management as a choice between full privatization and full state ownership creates a false dichotomy. Resources can be successfully managed under community ownership, and there are also all sorts of combinations of private, community, and state management of resources. Ostrom's work demonstrates the diversity of institutions that may be workable as long as they are structured in a way that leads to social coordination and cooperation. This is significant, because discussions about property rights have usually focused on private property or state ownership.

Though Ostrom's Nobel Memorial Prize in Economic Sciences is a testament to the importance of her ideas about co-ownership, maybe even more important is her focus on governance institutions. A significant part of the solution to overfishing is that people have workable institutions that solve social problems. Solving these problems may involve a combination of private, community, and state ownership of commons. What Ostrom's ideas suggest is that there is also a more purely "political" aspect to effective management of commons, which is that community elements can be present in any of these arrangements and in the process of making decisions about how to organize rules to manage commons. In polycentric systems—those systems that prioritize autonomy of local public, private, and nonprofit actors within an overarching system of shared higher-level governance institutions—the choice of the rules, whatever they are, is more likely to be workable when the rules are developed with local input and with input from a diversity of actors besides national governments alone (or besides national governments and the most dominant international organizations).

Perhaps the most obvious example of Ostrom's ideas are "small-scale" fisheries that are co-managed. They are small only in the sense that they are within an EEZ, though they are highly capitalized. Under co-management, fishers work collaboratively with regulators to design, monitor, and enforce fisheries policy. Co-management works because fishers have incentives to abide by rules they helped make, and the rules incorporate tacit and dispersed knowledge into the decision-making process.

Journalist Bruce Barcott has written about Southern California's sea urchin fishery as an example of successful co-management.[6] According to Barcott, the urchin fishery was a free-for-all in the early 1970s. Coastal managers considered the urchins a pest since they eat kelp beds, so the managers established a no-limit harvest. By the 1990s, Japan's demand for sushi combined with no limits on harvests had led to a perceived crisis: the urchin population had declined by 75 percent, and it continued to fall even after the state limited urchin licenses. What is remarkable is that urchin fishers (who dive to harvest them) figured out appropriate limits among themselves. These community leaders led the way. Today, Southern California is one of the most successful co-managed fisheries. There are hundreds of such fisheries worldwide.

The small community of divers that harvest sea urchins off San Diego's coast is the kind of arrangement usually associated with Ostrom's ideas. The case of the sea urchin fisheries also shows that self-governance does not mean no government involvement. Divers worked with regulators to establish more

effective rules. This was also a system in which the boundaries were clearly defined, because the divers were licensed, and the urchin fishery is within the EEZ of a powerful country that can enforce rights to its waters.

FROM SMALL-SCALE FISHERIES TO THE HIGH SEAS

Now comes the challenge. Does an approach that has been so fruitfully used to analyze small-scale fisheries have relevance for the high seas? There are several reasons to think that it does, but first it is important to consider what makes the high seas different.

The high seas certainly present a more complicated situation. One challenge is that the principle that the high seas are "for use of all mankind" can be interpreted as establishing a free-for-all. Such a system of use by anyone is a sure way to overexploit fishing stocks, especially when it coexists with rapid improvements in technology, including better radar and better nets. China, for example, subsidizes its distant water vessels, which can harvest massive quantities of fish, and imposes no restrictions on the type, age, or quantity of fish caught. Overfishing is thus a rational business response because there is massive demand for fish.

From a slightly more technical perspective, the high seas have many features of an open-access resource, namely, a resource for which there are no property rights, either formal or informal, governing its use. Global fisheries are governed primarily by the United Nations Convention on the Law of the Sea. One of the rationales for the Law of the Sea was to formalize the centuries-old customary law recognizing the freedom of the high seas. In essence, this convention codifies a tragedy of the commons.

Before accepting this "tragedy of the commons" perspective, however, it is important to keep in mind that the high seas are far from a true open access situation. Some fishing is looked down upon, as evidenced by international agreements establishing rules for international fishing. These rules prohibit certain activities. The fact that there are many fishing activities that fall into the IUU bucket means that fishing on the high seas is not open access, and high-seas fisheries are not for use by just anyone.

Unfortunately, enforcement of these rules is problematic. Article 73 of UN Convention on the Law of the Sea (UNCLOS) prohibits criminal prosecution of fishing offenses unless an express agreement between two states authorizes such prosecution. More generally, IUU fishing enforcement can be provided only by a vessel's flag state or by another state that has a bilateral agreement to do so with the flag state. Thus, if a country does not want to prevent IUU fishing, it does not have to. Similarly, while the UNCLOS enables vessel seizures, it does not authorize criminal prosecution. US domestic regulations, such as the Magnuson-Stevens Fisheries Conservation Act, apply only to fishing in the US EEZ, not on the high seas. The National Oceanic and Atmospheric Administration is engaged in monitoring IUU fishing, but it has no enforcement powers on the high seas.

There are processes that enable fishing on the high seas, including the High Seas Fishing Compliance Act, which in the United States implements the UN Food and Agriculture Organization's Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on

the High Seas. Through such legislation, US vessels can be authorized to fish and are obligated to report their catch.

One sense in which Ostrom's ideas are relevant is that there are ways to expand the concept of small-scale fisheries through the extension of EEZs. The current way that fisheries have been better governed is by extending nations' coastal property rights. Nations claim the strips of ocean adjacent to their coastlines; the high seas are the areas not so claimed. The expansion of EEZs over the past several decades establishes state ownership of the ocean. This point is sometimes misunderstood: EEZs do not privatize fisheries but rather extend government ownership.[7] After state ownership is established, there are many ways to assign property rights.

Many of these fisheries in EEZs are now governed by an individual transferable quota (ITQ) system, one in which a regulatory body establishes how many sea creatures may be caught in a given time period to ensure sustainability and where the rights to harvest sea creatures are allocated through markets. It turns out that the ITQ approach has worked quite well in many fisheries. The theory is that providing fishers with rights will enable more-efficient fishers to avoid rights, while the cap ensures a healthy stock.[8] ITQs cap fishing and enable fishers to trade catch rights. ITQs are market-like regulations that bestow quasi property rights in these catch rights, with the level of the cap determined by bureaucratic discretion. The initial distribution is subject to public choice pressures, because fishers do not have incentives to pay market value for the right to fish. Still, even with these challenges, ITQs offer advantages—in some situations—over command-and-control regulation of fisheries. In fisheries subject to command-and-control regulation, the amount of fish that may be caught is determined by a government agency. ITQ systems allow resources to flow more easily to highest-value uses, and they can mitigate the consequences of favoritism in the rights arrangements. If the cap is set properly, these systems tend to lead to fisheries governance that is more effective, as indicated by higher-value fish and fewer collapses compared to other systems for licensing fishing.[9] Globally, ITQs are associated with improvements in fish stock.[10]

As EEZs extend outward, there is greater scope for co-management of fisheries. In this regard, the Ostromian ideas about how to manage fisheries will expand with it, because the expansion of these boundaries created additional opportunities to implement co-management of fisheries. But the expansion of EEZs, and with it opportunities for co-management, is not the only way Ostrom's ideas can be applied to the high seas.

THINKING ABOUT OSTROMIAN SOLUTIONS ON THE HIGH SEAS

One of Elinor Ostrom's counterintuitive insights is that when communities face complex challenges, collective action remains possible. She is known for observing that there is more contribution to the common good than what is predicted by simple economic models of free riding. The logic of collective action based on the simple economic model of free riding suggests that, when the number of people involved in addressing a challenge becomes large enough, the incentive to do what is in the interest of the group

becomes extremely small. Whereas the simple free rider model suggests the need for a government to solve problems, Ostrom showed that when a problem is complex, governance will likely require different types of rules and approaches at different scales and scopes—and centralized government is not always the optimal solution. Civil society groups are examples of such groups that often play a significant role in commons management, but so are international nongovernmental organizations, industry standards, and international treaties. Governance that is intended to address complex problems must be multilayered to contribute to socially desirable outcomes.

Consider the example of the Sea Shepherds. Author Ian Urbina has written about this vigilante conservation group in *The Outlaw Ocean: Journeys across the Last Untamed Frontier*. The book describes how the Sea Shepherds chased a vessel that had profited by more than $76 million as a result of fishing in Antarctic waters. Even though Interpol had placed the illegal fishing vessel on its arrest-on-sight list, the vigilantes were the only ones willing to follow the ship, where they hoped to alert authorities to its location so that its captain and crew might be apprehended.[11] Indeed, they had some successes in this tactic, though what is typical is some fines for large-scale poaching, rather than jail time.

The Ostromian idea is that to deal with rogue actors such as these illegal fishers, it is critical to get more people involved in monitoring and enforcing the rules of the high seas. In her analysis of commons, Ostrom also emphasized that governments need to rely on citizens, businesses, and nonprofit organizations to monitor and enforce standards and regulations. Conventionally, monitoring and enforcement are considered public goods provided by governments. Ostrom's idea was that providing people with opportunities to participate in governance can be part of a strategy. Local authorities, and hence local groups, are going to have an especially significant role in monitoring and preventing illegal fishing. Calls for greater centralization risk ignoring the constraints that governments face in acquiring knowledge about how to best regulate a commons.

Combatting piracy on the high seas might require governments to partner with the vigilante conservation groups or at least to provide such groups with more legitimacy. This principle holds more generally for the global supply chain associated with illegal fishing, which is complex. It is challenging to discern what products come from illegal fishing. One response to overfishing is to increase centralized authority. But Ostrom's insight is that for complex problems such as this, it is even more important to pursue solutions from the bottom up.

BOTTOM-UP SOLUTIONS FOR COMPLEX PROBLEMS

Elinor Ostrom shows us that much of what conventional wisdom induces us to think about commons is probably wrong. Rather than assuming that private property or state ownership can be the only solutions to the overfishing problem, Ostrom shows that co-ownership is often workable. It is not the only lesson she has for us. Ostrom's lessons include the idea that finding the governance institutions that work best and that likely involve local communities and the people being governed. This might mean that governance of the high seas begins to involve (to a greater degree) the fishers of tuna and squid, the nonprofits

who want to improve management, and regional organizations. Ostrom also shows that it is important to have realistic models of how people behave. Rather than seeing fishers as rent-seekers, she recognizes that they often have the right incentives to monitor fish stocks.

This last point bears emphasis. The metaphor of the "tragedy of the commons" is often put out. It is an idea that the fishers only think in their self-interest and do little to develop institutions and rules that are good for themselves and for fish stocks. The tragedy of the commons is an unfortunate term; it comes from Garrett Hardin's oft-cited article that characterizes people merely as consumptive machines. There are no ideas, technologies, or ingenuity—there is nothing especially social—in the tragedy of the commons. But Ostrom's ideas require us to recognize that humans can create institutions that align incentives and facilitate knowledge communication so that we avoid the tragedy of the commons. This creativity to devise institutions may be Ostrom's most enduring lesson for the high seas. When people are given the space to be creative, they can find multifaceted solutions to complex, global problems.

MAKING THE WORLD TRADE ORGANIZATION MORE OSTROMIAN

One of the main threats to fisheries today is that several countries are subsidizing massive fishing fleets. On the high seas, there are few enforcement mechanisms that can combat overfishing, and some nations, especially China, have even been emboldened to enter the EEZs of other nations.[12] Responses to these incursions generally involve governments, not fishers, defending their EEZs.

Enter the World Trade Organization (WTO). The WTO, through its recent agreements, has created a framework to reduce subsidies. Unfortunately, modern fishing is highly capitalized, and capitalization brings the challenges of cronyism as well as the exclusion of smaller-scale fishing in coastal oceans and by indigenous people. The WTO's framework should address, to an extent, the problem of capacity. But it is imperfect for several reasons. One reason is that it fails to increase the ability to enforce prohibitions against overfishing. But eliminating subsidies is only part of the broader question of how to govern fisheries, as tackling subsidies is primarily removal of one pernicious type of industrial policy.

The WTO's progress is welcome, but there remains an opportunity to make global fisheries governance more Ostromian. I say "more Ostromian" because global fisheries governance already has features of a polycentric system: the WTO coordinates the activities of nation states, which in this case are autonomous.

Though the WTO subsidies agreements are welcome, they are not the same as efforts by the international community to provide for greater regional cooperation in fisheries and to engage more deeply with fishers and with the organizations devoted to improving fisheries governance. In fact, if the WTO becomes more centralized, its fisheries governance may focus even more on national governments rather than on the rich diversity of organizations that manage global fisheries. What is necessary is not only agreements about subsidies but efforts to engage with a diversity of stakeholders more deeply—not just governments.

What the WTO can do is make more explicit that it already relies on co-production, or at least could benefit more from it. The examples above show that the WTO is not enforcing things by itself. All enforcement benefits from co-production. Even at the global scale—benefits from Ostrom's ideas, since that is all going to be how the rules are enforced, and how progress is made.

The WTO could focus its next round of agreements on applying to the high seas some of the strategies that have worked well in small-scale fisheries. These strategies include extending EEZs and investigating and experimenting with co-management at increasing scales. Since co-managed fisheries seem to work well in many circumstances as long as they have strong leaders and robust social capital, it makes sense to explore how they might operate over more of the ocean, especially where international fleets have been increasingly coming up against current EEZs. Such solutions would likely require governments to step up in enforcing boundaries, though the concept is still one whereby the idea of how small-scale fisheries are managed is effectively scaled up.

Overfishing on the high seas is a complex problem, tied up as it is with many other challenges such as the difficulties of monitoring IUU fishing, the difficulties of monitoring supply chains, and even the issue of sea slavery. These problems do not necessarily require top-down solutions. If we seek to solve these problems, we should put more thought into ways to enable and empower citizens and organizations at the local level to participate in the collective management of fisheries. Eliminating subsidies is politically challenging, but it is perhaps conceptually simpler than identifying ways to make a polycentric system "more polycentric." Nonetheless, concentrating on efforts to increase polycentricity may be more beneficial for consumers, for fishers, and ultimately for the fish.

ACKNOWLEDGMENTS

Many thanks to Paul Dragos Aligica, Garrett Brown, Bobbi Herzberg, Jordan Lofthouse, Christine McDaniel, Veeshan Rayamajhee, Weifeng Zhong, and participants in the New Frameworks for Troubled Waters Workshop (held in Pittsburgh, Pennsylvania, on June 15–16, 2023) for valuable comments and suggestions and to Corrie Schwab for copyediting. I'm also grateful to the Center for Governance and Markets and the Mercatus Center at George Mason University for their support.

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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

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