



THE OCEAN FOUNDATION

There are Many Tools for Effective Fisheries Management: Preventing unintended negative consequences of catch shares

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Threats to the health of our ocean are intensifying. Overfishing, bycatch and destructive fishing gear remain major culprits in the destruction of marine life and habitats, which are also threatened by ocean warming caused by fossil fuel emissions, sea level rise and ocean acidification.

We have identified tools that support better fishery management—many of which have been implemented (albeit slowly) in the wake of the 1996 federal fisheries management law reform, and its more recent reauthorized 2006 version. A dedicated coalition worked step by step at the national level and at each of the 8 fishery management councils to educate, promote, and support the use of these tools. In turn, substantial progress has been made in reducing overfishing in the waters of the United States. Every tool must stay in use to ensure that our fisheries continue to improve—and we must also avoid the temptation to declare any tool the one solution to all of our ills. Such solutions do not exist in real time, or in real life, and especially in complex systems such as those that make up our global ocean.

Unfortunately, a few of our tools, i.e. those promoting quotas and “ownership shares” of threatened fisheries, have been embraced as just such a “silver bullet solution,” although they were designed to address completely different problems, and despite their serious drawbacks and unintended consequences.

One tool’s evolution of terms / definitions

“**Individual fishing quotas**” (IFQs) also known as “**individual transferable quotas**” (ITQs) are used by governments to regulate fishing. The regulator sets a species-specific total allowable catch (TAC), typically by weight and for a given time period. A dedicated portion of the TAC, called a quota, is allocated to individuals. Quotas can typically be bought, sold and leased, a feature called transferability.

“**Limited Access Privilege Programs**” (LAPPs) are limited access systems whereby federal permits are issued to harvest a quantity of fish representing a portion of the TAC. The term “LAPPs” came into use in place of “IFQs/ITQs” because this new term encompasses both individuals and communities who may be eligible to receive an allocation of a portion of the TAC or commercial quota.

“**Catch share**” is the newest term used for fishery management systems that dedicate a secure quasi-right to harvest a specific area or percentage of a fishery’s total allowable catch to individuals, communities or associations. Catch shares are different from traditional management as catch shares provide long-term secure privileges to participants.

Yesterday, the reporter Susanne Rust vividly described this overreliance on “catch shares” and other related tools in an article for Salon.com that was widely printed and quoted in other media.¹ Since then, Twitter traffic has been hot and heavy, with catch share fans, including a few environmentalists, arguing vehemently that the Rust article is biased and irresponsible. We disagree; we think Rust has done the environmental community a great service by surfacing some of the negative consequences of market-based fishery allocation tools. In this paper, we want to lay out our own perspective on this issue and to bring up some additional concerns about these tools.

Since they were first implemented in the 1990’s, ITQ/LAPP/catch share schemes have been effective in doing what they were originally intended to do--reducing deaths, injuries and loss of gear and vessels. In some cases, they may have incidentally reduced the volume of fish catch in the target fisheries as well, but their primary purpose has always been to “rationalize” the oversupply of fishing vessels in crowded markets and to end the practice of derby style fishing which is often associated with catch limit systems. This “rationalization” process has sometimes produced dramatic results. According to Rust, in New Zealand, where catch shares are the national policy, the government estimates that eight companies control 80 percent of the industry’s production. In the US, the surf clam fleet of the Mid-Atlantic has declined by well over 50% while under one of the earliest catch share programs.

Because of their limited success in managing fishing stocks, however, many supporters jumped on the bandwagon of “market-based” incentive systems, arguing with little proof, but with a great deal of funding support from free-market oriented sources, that this set of tools is the ONE solution that can stop overfishing. Unfortunately, we now know that changing ‘too many people’ chasing our fish to ‘just the right number of people’ is a very complicated (and costly!) social and economic experiment.

The theory behind ITQs/LAPPs/catch shares market-based approaches is that fishing access can be traded openly and efficiently in an economically beneficial manner. If fishermen know that they “own” a share of the resources (fish stocks) they will *theoretically* have less incentive to race to catch the last fish **and** will *want* to embrace precautionary management measures. At intervals (usually yearly), scientists will tell the fishermen in a fishery what percentage (or share) of the total allowable catch (TAC) they can catch that year (season, etc.), based on their projections of how well the fishery is doing in terms of population size and growth (or decline).

Catch Shares (CSs) are meant to represent a somewhat less regulatory approach than ITQs and are based on the concept of “shareholder,” akin to the way companies are owned and run. The argument goes something like this: if fishers gain ownership control over a share of the available fishery, they will have more incentive to preserve the fishery for their long-term benefits. As Rust states in her article, catch shares “work by providing harvesting or access rights to fishermen. These rights – worth tens of billions of dollars in the United States alone – are translated into a percentage, or share, that can then be divided, traded, sold, bought or leveraged for financing, just like any asset.”

However, this approach assumes that fishery “assets” can be allocated efficiently and “owned” (a huge assumption when we are talking about “assets” that can move around and leave the fishery area) and that most stakeholders can see the benefit of the scheme. Reductions in the TAC, gear restrictions, and closed seasons have not always worked as expected. For example, the New England catch shares system has been plagued by lawsuits, and the net result has been even lower fish populations and a massive consolidation of the fishing industry in the hands of a few companies. Long-term sustainability of fisheries resources requires resolution of allocation issues in a manner that provides stability, accountability, and profitability for fishing communities, not just for industry representatives and those who seek to create monopolies.

¹ Rust, Susanne “Catch shares leave fishermen reeling” The Bay Citizen (12 March 2013)
<https://www.baycitizen.org/news/environment/system-turns-us-fishing-rights-into-commodity-sque/>
13 March 2013

To be fair, we acknowledge that there have been a few examples where the benefits of a market based approach have clearly outweighed their costs. One such successful example is the crab fishery in Alaska. As viewers of “The Most Dangerous Catch” know well, crab fishing in the Bering Sea is a dangerous business. Workers must deal with turbulent seas, heavy and hazardous equipment, and extreme weather. After 1980, the supply of King Crab declined significantly, driving local fishers into an ever more dangerous “derby fishing” race to exploit the remaining catch in very short “seasons.” Crab fishing became the most dangerous fishing job in the US; deaths and loss of equipment were common. After 2005, an ITQ scheme was implemented which lengthened the “season” and allocated fishing quotas. The number of deaths and lost fishing vessels plummeted. Unfortunately, so did the number of fishing vessels in the fleet, by about 70%. While dramatic, this drop in available fishing employment had less impact in Alaska since the industry was highly commercialized and not based on long-term traditions and communities, it had been in “downsizing mode” for some time already due to the drop in supply of seafood, and there were reasonable job alternatives available for most of the workers.

As noted above, the ITQ schemes in New England have been far more controversial. Most of these schemes were imposed by the government, not developed by local fishers, and failed to incorporate appropriate scientific, environmental, technological and cultural concerns. While they have saved lives and made fishing safer, they have also resulted in severe unemployment in a region where few options exist, and where the fishing culture is highly entrenched. The region has seen a major consolidation of the fleet into the hands of a few families and corporations. And the impact on fish populations is very murky; while fish stocks have improved in some places, the ITQ schemes have also pushed fishing boats to exploit different locations and less valuable fish stocks. We have seen little proof that quotas result in better overall marine stewardship.

Happily there are a few exceptions in New England. For example, the Cape Cod Hook Fishermen Association and the Cape Cod Fisheries Trust have collaborated to design a “catch share” system that protects small fishing families and communities. As *Saveur* magazine noted last month, their system has

demonstrated that it's possible to bring home high-quality cod and haddock while still protecting the species. Instead of using wasteful methods such as massive-net trawling, the members fish with hooks, lines, and smaller nets. All by-catch, or unwanted fish, is released alive. Unlike industrial trawlers, which can stay at sea for up to a week, the Hook Fishermen deliver fish to port fresh. The group has also lobbied for stronger monitoring of catches nationwide, cooperated with scientists and educators to support healthy oceans, and helped revamp the way the region's fishing is regulated.

Dr. Callum Roberts, with the Environment Department of the University of York, United Kingdom states; “I think the economist Seth Macinko put it well when he said ‘Why are we turning to catch shares as a solution to management failure when we haven't really tried management yet!’” A more comprehensive management approach to over-fishing must include provisions to protect habitat, ensure the protection of the entire food web and multiple species dependencies, prevent monopolies and remain sensitive to fish-dependent communities.

So, the question is, do CSs/ITQs achieve stated goals? In accordance with National Marine Fisheries Service (MSA) National Standard 5, CSs/ITQs are largely intended to improve economic efficiency and conserve resources by limiting access to fisheries and reducing excess fishing capacity. But goals for economic efficiency often conflict with objectives for social equity/community participation (National Standards 4, 8).

Economic efficiency assumes that limited access to the resource creates a market for the “**right**” to fish and encourages fishing fleets to consolidate if catch shares can be transferred or sold. This in turn means fewer fishing boats putting less pressure on a fishery resource, so there will be more fish. In addition, management theoretically becomes easier due to fewer, larger players. In practice, however,

scientifically-set catch limits are often challenged on the basis of economic adversity by the new more organized, politically powerful, and better financed interests. As a recent example, commercial fishermen are claiming that a 2010 catch share scheme made conservation areas obsolete, and called on the New England Fishery Management Council to open such conservation areas for fishing. Another touted benefit of catch shares is the protection it offers fishermen and their communities against the instability of the markets. However, factors such as changes in markets and consumer demand (driven by education efforts such as the “fishbuying cards” from the Monterey Aquarium and better labeling by stores like Whole Foods), and the vulnerability of community-based, small-boat fleets to preemption by bigger competitors from other jurisdictions, pose serious threats to the retention of the small-boat, owner-operator character of a given fishery if the goal is primarily either economic or management efficiency. A prime example is the halibut fishery in the Pacific Northwest, where families who were “blessed” to receive quotas have been able to consolidate and reduce the number of competitive vessels, become multi-millionaires themselves (causing friction with their now-unemployed neighbors), choose where they land their fish and where those fish are processed, and control other ancillary services. Essentially, the government has created a new quasi-monopoly with huge barriers to entry for potential competitors.

Catch share regulations are often held up as the **only** alternative to open access (which remains unworkable in the modern world) regardless of local fishery conditions. They have been recognized and prioritized under US fisheries legislation, in spite of overwhelming opposition from the scientific, conservation, and fishing communities.² While the successes have been about human safety (good), they have not been about conservation or economic stability (unless you like consolidation and monopolies).

As Brian Rothschild, professor emeritus at the University of Massachusetts at Dartmouth's School of Marine Technology and Science, noted, “It is difficult to consider the catch share system as having any function other than economic allocation as its sole purpose” (which is illegal under US law) or the original and successful intent of saving lives by replacing derby fishing with annual quotas. They were intended as **one** tool among many, not to be prioritized as a single regime that replaces sophisticated science-based multi-pronged management strategies.”

Opponents of catch shares claim that they merely privatize public resources, which is often incredibly destructive for communities due to consolidation, displacement, social disruption, and loss of community. These constraints impact not only the fishers themselves, but all areas of onshore fishing jobs, such as processing plants, boatyards, insurers, equipment sellers, transportation providers, and so on. From a purely economic standpoint, they promote limited access and other impediments to a free market, which benefits neither communities nor consumers. Contrary to economists' expectations, they have never led the “winners” to compensate the “losers.”

The conservation outcomes of such policies must not be overlooked. CSs/ITQs are presented as a one-stop solution proven to have considerable effectiveness in conservation, but there is no proof that they alone can have significant conservation benefits. CSs/ITQs may not do anything to promote fish population growth or prevent fishery collapse. Because there's no required tracking of where the boats that sell out in one fishery go next, the argument may be made that catch shares merely “displace” capacity, they don't reduce it.

² For example, see:

Crockett, Lee, *Design Matters*;

Earth Client. *The Legality of Mandatory Transferable Fishing Concessions*;

Food and Water Watcher, “Catch-and-Trade Catastrophes”;

Lenfest Ocean Program, *Catch Shares and Fisheries Sustainability*;

Lenfest Ocean Program, “*Catch Shares Improve Consistency, Not Health, or Fisheries*”; and

Marine Fish Conservation Network, *Individual Fishing Quotas: Environmental, Public Policy, and Socioeconomic Impacts*

Real problems such as by-catch and destructive fishing methods, or single species management, are not addressed by CSs/ITQs. As Rust noted in her article, catch share schemes have disproportionately benefited trawler-based fishers over those who rely on traps or more environmentally sustainable hook and line practices.

Private ownership of fishery resources may additionally limit managers' ability to introduce protected areas or establish other ecosystem based management (EBM) measures as required by federal law. New participants may also be denied access into a recovering fishery. And, once issued, downward adjustment of Total Allowable Catch based on scientific measures is next to impossible due to the interests of the shareholders.

Over the long term, it has also not been proven that fishers become better stewards—that they fish more carefully, deploy their gear more selectively, avoid damaging sensitive habitats, retrieve lost and tangled gear, or support science-based cuts in their allowed catch to build populations for the future solely by virtue of implementing CS/ITQ schemes.³ In addition, fishers are pressured to pursue self-limiting conservation strategies because they are promised it will result in an increase in the amount of fish they can catch but there is no evidence that such behavior (or reward) necessarily follows, especially under economic duress.

For example, if a fishery collapses for outside reasons (water chemistry, water temperature, oil spills), who is going to compensate the fishers for the perceived loss and what support is there for rigorous enforcement in times of crisis? Had ITQs been in place across Gulf fisheries, how would we have handled post-Deepwater Horizon disaster allocations of catch? What if the population on which Total Allowable Catch (TAC) is based was affected for years to come? Would fishermen sue NOAA/BP/Transocean/Halliburton for harming their economic opportunity (ownership) interest in the longer term, and value that interest at their share of the expected TAC during the closure or in years beyond the scope of any BP compensation scheme? Do we have a clear framework for all of the legal details when populations of target fish drop, shift geographically, or suffer external harms? Shouldn't we?

In spite of considerable concerns expressed by the rest of the marine conservation community and grave concerns about the viability of traditional small fishing communities that lack economic alternatives to harvesting from the sea, CSs/ITQs are now being pushed into artisanal fisheries in developing countries. This is notwithstanding the obvious risks of corruption and money laundering, and transfer of additional wealth and influence to existing "strong men" who exact revenue from the actual fishermen. In Mexico in particular, we have observed that small boat fishers become beholden to local strongmen involved in narco-trafficking, and are not only forced to transport drugs, but often wind up having their boats confiscated and abandoned by drug traffickers. There is little doubt that the fleet consolidation consequences inherent in these schemes will encourage those who are seeking to launder drug money. We need to perfect our own use of management tools before we export them to other countries. We must acknowledge what is missing and/or broken and explore ways to limit and mitigate their inherent negative impacts including prey species, habitat protection, and, the future of the portion of global food security that depends on the ocean.

There is an urgent need to set the record straight on what CSs/ITQs are, and what they are NOT; and what they can, and CANNOT do. They should not be discarded, but rather their shortcomings addressed, and newly implemented in a precautionary way, with sufficient involvement of the beneficiaries and attention to the consequences. CSs/ITQs must be acknowledged as only ONE of the

³ For example see:
Lenfest Ocean Program, *"Catch Shares Improve Consistency, Not Health, or Fisheries"*; and
Nowlis, Josh Sladek, *Do Property Rights Lead to Conservation Benefits in Fisheries?*

tools that can help restore fisheries, along with science-based catch limits, controls on by-catch, and effective protection of key marine habitats.

Before we can further implement CSs/ITQs we must define the rules to prevent unintended negative social, economic and environmental consequences, and what we do when they occur. Any economic incentives must be structured to avoid conditions that could trigger claims of "interference with economic benefit" (of individual quota owners) whenever habitat or species protections (or a reduction in the TAC) become a scientific necessity. We must also put in place monitoring and policy tools to be used in combination with CSs/ITQs to ensure the significant excess capacity we have in fishing boats and gear does not just shift to other fisheries and geographies.

US federal fisheries management law emphasizes **fairness, equity and consideration of community interests**, so why wouldn't we at least consider how we might allocate fishing privileges and public resources within these priorities?

It's something to think about as fishery populations shift in response to temperature and chemistry changes in the ocean, and of course, as we open new, vulnerable, fisheries-rich areas like the Arctic to high risk oil and gas extraction activities.

The most simplistic solution is unlikely to be the best. The path to achieving our sustainable fishery management goals requires step-by-step, thoughtful, multi-pronged approaches. Implementation of the first visionary federal fishery law of 1996 and its 2006 cousin have been slow and frustrating. But a dedicated coalition of organizations (and their funders) around the country hung in there. And substantial progress has been made in reducing overfishing in the United States. Many fisheries are in recovery and we need to use every tool to keep them that way. We want to make sure that we do not abandon our hope of ensuring that fishing-dependent communities have a stable economic, environmental, and socio-cultural future.

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