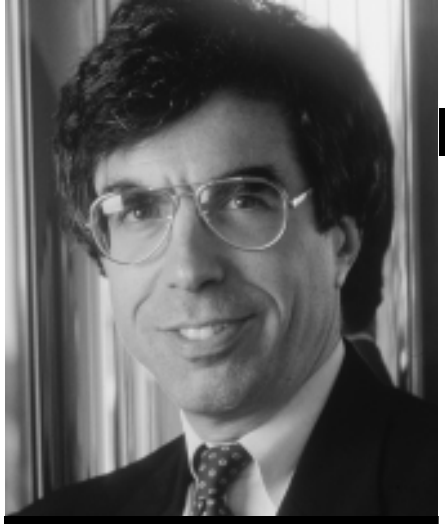

By Robert N. Stavins

Markets Can Make Fisheries Sustainable

Around the world, over-fishing is leading to severe depletion of valuable fisheries. This is as true in U.S. coastal waters as it is in many other parts of the world. Off New England, for example, after two decades of ever more intensive fishing, the groundfish fishery has essentially collapsed. But, we are not alone. According to the United Nations Environment Program, fully 25 percent of fisheries worldwide are in jeopardy of collapse due to over-fishing. Clearly, something needs to be done. Yet, what has long been considered the obvious answer — restrictions on fishing — has been shown time and time again to be the *wrong* answer. The right answer is enlightened use of markets.

The fundamental cause of the depletion of fish stocks is well known to economists: virtually all ocean fisheries are "open-access," that is, fishermen — small operations or large corporations — can fish all they want. These individuals and companies are no more greedy than the rest of us, but because no one holds title to fish stocks in the open ocean, everyone races to catch as much as possible. Each fisherman receives the full benefit of aggressive fishing (that is, a larger catch), but none pay the full cost (an imperiled fishery for everyone). One fisherman's choices have an effect on other fishermen (of this generation and the next), but in an open-access fishery — unlike a privately held copper mine, for example — these impacts are not taken into account. What is individually rational adds up to collective foolishness, as the shared resource is over-exploited. Economists have long labeled this the "tragedy of the commons." What to do?

Government intervention is, alas, required. Fishermen don't welcome such regulation in their economic sphere any more than anyone else does. And they have a point. Conventional regulatory approaches have driven up costs, but not solved the problem. And we know why. If the government limits the season, fishermen put out more boats. If the government limits net size, fishermen use more labor or buy more costly sonar. Economists call this over-capitalization. Costs go up for fishermen (as resources are squandered), but pressure on fish stocks is not relieved.

The answer is to adopt in fisheries management the same type of innovative policy that has been used for decades in the realm of pollution control — tradeable permits, called "Individual Transferable Quotas" (ITQs) in the fisheries realm. Sixteen countries — some with economies much more dependent than ours on fishing — have adopted such systems with great success.

New Zealand regulates virtually its entire commercial fishery this way, a point made in the Profile of former cabinet minister Maurice McTigue in the January/February issue of this magazine. It's had the system in place since 1986, and it's been a great success, putting a brake on over-fishing and restoring stocks to sustainable levels — while i*ncreasing* fishermen's profitability!

There are several ITQ systems already in operation in the United States, including for Alaska's Pacific halibut and Virginia's striped bass fisheries. More important, the time is ripe for broader adoption of this innovative approach, because a short-sighted ban imposed by the U.S. Congress on the establishment of new ITQ systems has expired.

The first step in establishing an ITQ system is to establish the "total allowable catch." The next step — and a crucial one — is to allocate shares of that total limit to fishermen in individual quotas that are theirs and theirs alone (read: well-defined property rights). Setting the individual quotas will not be easy. The guiding principle should be simple pragmatism — using the allocations to build political support for the system. Making the quotas transferable eliminates the problem of overcapitalization and increases efficiency, because the least efficient fishing operations find it more profitable to sell their quotas than to exploit them through continued fishing. If you can't catch your whole share, you can sell part of your quota to someone else, instead of buying a bigger boat.

In addition, these systems improve safety by reducing incentives for fishermen to go out (or stay out) when weather conditions are dangerous. And it was just such perverse incentives of conventional fisheries regulation that were blamed for the tragic loss of life when a fishing boat was lost in a storm off the New England coast this past winter.

Further, because ITQ systems eliminate the motivation for government to limit the duration of the fishing season, supplies available to consumers improve in quality. Prior to the establishment of an ITQ system for Alaskan halibut, for example, the government had reduced the fishing season to just two days, but subsequent to the introduction of the system, the season length grew to more than 200 days.

A decade ago, environmental advocates — led by Environmental Defense — played a central role in the adoption of the sulfur dioxide allowance trading program that's cut acid rain by half and saved electricity generators and rate-payers nearly $1 billion annually, compared with conventional approaches. The time has come for environmentalists to join forces with progressive voices in the fishing industry and in government to set up ITQ systems that can keep fishermen in business while moving fisheries onto sustainable paths.

Robert N. Stavins is the Albert Pratt Professor of Business and Government at the John F. Kennedy School of Government and Director of the Environmental Economics Program at Harvard University. He can be reached at robert_stavins@harvard.edu.