

# Small But Mighty

Elevate the role of small-scale fishers in the world market

By Daniel Pauly

Conservation biologists have long complained about the vastly greater ecological impacts of large-scale industrial fisheries compared with small-scale, artisanal ones. Yet policymakers continue to grant industrial fishers a competitive edge, in great part due to a widely held perception that they catch the vast majority of the world's fish. Recently, though, more-thorough estimates of annual global catch proved that assumption wrong: it turns out that small-scale fisheries actually land as much as their industrial counterparts, at least as far as fish destined for human consumption are concerned.

This new knowledge that the world does not actually rely on industrial fisheries for food security lends new force to the argument that they are expendable, not vital. Indeed, I argue that the best path toward sustainable fisheries worldwide would be to phase out industrial fisheries in favor of artisanal fisheries, which have a much better track record of sustainability.

Artisanal fisheries usually involve a multitude of fishers working inshore, using mainly small craft and passive gear and thereby consuming relatively little fuel per unit of catch landed. Industrial fisheries, on the other hand, employ relatively few people and tend to use bigger, fuel-intensive vessels—many of which pulverize entire ecosystems as they drag nets and gear along the seafloor. And although they generally operate offshore, more and more industrial fishers are moving

inshore—and into direct competition with local, artisanal fishers.

The features of industrial fisheries that, to date, give them a competitive edge may turn into liabilities in the future: the price of diesel fuel may become prohibitive, and more people are challenging the huge ecosystem impact of their practices. More groups are demanding that governments around the world reduce their fisheries subsidies—currently US\$30 billion to \$34 billion per year—which go overwhelmingly to industrial fishers.

In the long term—possibly as little as two or three decades—fisher-

ies and fishing-based cultures will not survive if we do not manage to put small-scale fisheries and resources first. However, for these fishers to assume a more dominant role and to possibly contribute toward sustainability, they will have to be given exclusive access to coastal resources. That means not only reining in competition from industrial fishing operations but also protecting fishing rights from the massive throngs of unemployed farmers and other rural residents who are moving to the coasts and taking up fishing as an occupation of last resort—a central cause of coastal overfishing in many developing countries.

Many examples of small-scale fisheries that work exist throughout the world, and their broad-scale emulation would go a long way toward overcoming the global crisis of fisheries. ■

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Benefits	Large-scale Fishery	Small-scale Fishery
Number of fishers employed	about 1/2 million	over 12 million
Annual catch of marine fish for human consumption	about 29 million tonnes	about 24 million tonnes
Capital cost of each job on fishing vessels	US\$30,000-\$300,000	US\$250-\$2,500
Annual catch of marine fish for industrial reduction to meal, oil, etc.	about 22 million tonnes	almost none
Annual fuel oil consumption	14-19 million tonnes	1-3 million tonnes
Fish caught per tonne of fuel consumed	2-5 tonnes	10-20 tonnes
Fishers employed for each US\$1 million invested in fishing vessels	5-30	500-4,000
Fish and invertebrates discarded at sea	10-20 million tonnes	little

**The duality of fisheries** prevailing in most countries of the world (numbers raised to global levels) reflects not only the misplaced priorities of fisheries development, but also opportunities for reducing environmental impacts and rebuilding depleted resources while maintaining social benefits. The solution is to phase out large-scale fisheries, notably by reducing the government subsidies they presently and undeservingly enjoy. For more information: Pauly, D., 2006. *Maritime Studies* (MAST) 4(2): 7-22.