Funding Priorities: Big Barriers to Small-Scale Fisheries

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Since the mid-1990s there has been a concerted effort to encourage fisheries sustainability by targeting large-scale, high-catch fisheries and by raising consumer awareness. Because of the often slow pace of regulatory approaches, this voluntary, market-oriented effort has been structured so as to avoid government involvement. But have small-scale fisheries, our best option for sustainable use of fisheries resources, been lost in the market-based push toward sustainability?

In financial terms the largest sustainable fisheries initiative has been the U.S.-based Seafood Choices campaign, largely funded by the Packard Foundation. From 1999 to 2004, Seafood Choices invested $37 million in more than 30 nonprofit organizations to promote market-based sustainable seafood initiatives, such as ecolabeling certification and seafood wallet cards that tell consumers which fish are being caught sustainably (Bridgespan Group 2005). In contrast, over the last decade, only 2 U.S.-based nonprofit organizations have invested <$1.5 million in research and policy reform related to global fisheries subsidies. Since the late 1990s the World Wildlife Fund (WWF) has had one full-time person working on fisheries subsidies and lobbying countries to reduce subsidies (approximate cost < $100,000/year). In 2005 the nonprofit organization Oceana began a campaign against fisheries subsidies with some staff working part-time on the issue of subsidies (approximate cost < $75,000). In 2006 Oceana ramped up their efforts against subsidies (approximate cost $125,000–150,000) and in 2007 spent approximately $400,000 on subsidy-related efforts, including a paid advertising campaign, media, staff, and travel (M. Hirshfield, personal communication).

Although they are often described as very variable between countries, small-scale fisheries are characterized as fishers operating in boats of 15 m or less, or without boats (Chuenpagdee et al. 2006). They generally use less energy-intensive fishing gear and cannot operate far offshore. Although industrial trawlers use destructive fishing gear that destroys the bottom habitat on which exploited species depend (Chuenpagdee et al. 2003) and, jointly with other industrial fisheries, discard 8–20 million t of unwanted dead fish each year (Zeller & Pauly 2005), small-scale fisheries discard little to no fish and (with the exception of a few gears, including dynamite) do not destroy benthic communities. Unlike specialized industrial fisheries, small-scale fishers are capable of targeting different fish species on the basis of their availability (Munro 1979). Furthermore, small-scale fisheries produce little to no fishmeal, whereas the industrial sector reduces 20–30 millions of fish annually into fishmeal to feed pigs, chickens, and farmed fish (Alder & Pauly 2006). Small-scale fisheries employ 25 times more people and use one-quarter the fuel to catch roughly the same amount of edible fish (roughly 30 million t) as the large-scale, industrial fishing sector (Chuenpagdee et al. 2006; Pauly 2006; Fig. 1).

Although small-scale fisheries are potentially, and in many cases actually, more sustainable than large-scale fisheries, they are disadvantaged because of their typical remoteness, lack of infrastructure, and marginal political power. Furthermore, small-scale fisheries are at a disadvantage when competing for fisheries resources and market access with heavily subsidized industrial fleets (Ponte et al. 2007). More recently, small-scale fisheries have begun to face an additional barrier to trade from well-intentioned sustainable fisheries initiatives, such as ecolabeling.

The best fisheries ecolabel is that of the London-based Marine Stewardship Council (MSC), whose 2006 budget was $4.6 million (MSC 2006). Since 1999 the MSC has certified about 7% of the global market for fish from

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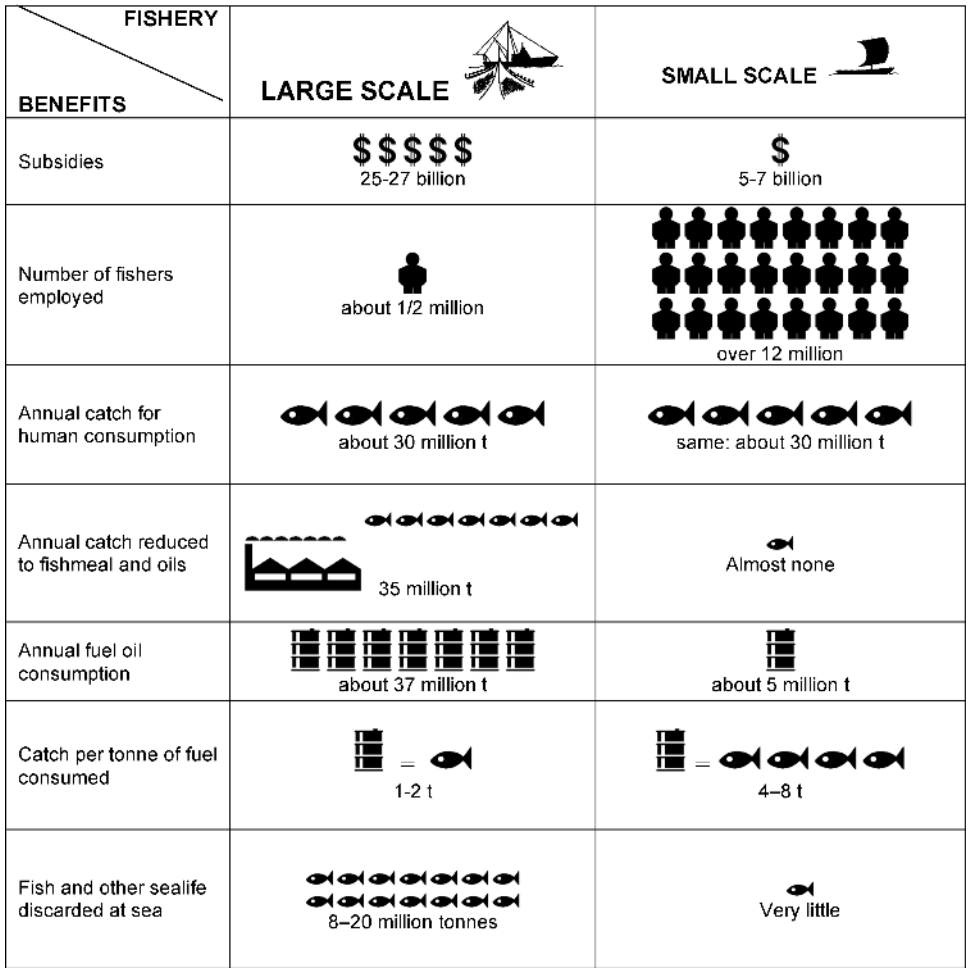

Figure 1. Schematic illustration of the duality of large and small-scale fisheries prevailing in most countries of the world (statistics are global). Adapted from graph in Pauly (2006).

capture fisheries (as opposed to farmed fish). Of the 26 MSC-certified fisheries, 2 are located in the developing world and only 1, the Mexican Red rock lobster (*Panulirus interruptus*), is a small-scale fishery. The MSC bias against small-scale fisheries is neither intentional nor unacknowledged, and it stems from real technical difficulties in defining sustainability criteria for fisheries that are data poor.

Thus, critics of ecolabeling point out that product promotion is occurring in markets in which food requirements have already been met and that small-scale fishers, by default, are left to sell the "unsustainable" fish (Constance & Bonanno 1999). Ecolabeling may provide good incentives for the improvement of industrial, high-volume fisheries, but ecolabeling cannot contribute much to the global improvement of fisheries management if it cannot serve the needs of small-scale fishers (i.e., the majority of fishers worldwide).

In late 2007 the MSC announced new technical guidelines to determine whether data-poor fisheries could be certified and is currently testing 4 developing world fisheries for eligibility. But a more effective market-based approach to improving fisheries sustainability globally is the elimination of harmful fisheries subsidies (Sumaila & Pauly 2007). Worldwide, fisheries subsidies are estimated at $30–34 billion annually, the overwhelming majority of which goes to industrial fisheries (Table 1). Politicians keep excess fishing capacity afloat with subsidies. Large-scale vessels are built by heavy industry with big subsidies, whereas small-scale boat construction generally favors local craftsmanship and receives little government financing. On the water large-scale fisheries are further granted the competitive edge over small-scale fisheries, often under the false premise that the large-scale sector delivers more fish to markets. The result: subsidies further marginalize small-scale fishers and marine biodiversity suffers more than if the market was truly competitive.

Fuel subsidies, which total $6.3 billion annually, illustrate the situation (Sumaila et al. 2006). The industrial fishing fleet uses 89% of total fuel for catching fish, whereas the small-scale fleet uses only 11%. The average industrial fisher receives an estimated 187 times more fuel subsidies each year than the average small-scale fisher (Tyedmers et al. 2005; Pauly 2006). Yet, small-scale fishers catch 4 times more fish per liter of fuel (Pauly 2006). The elimination of fuel subsidies to industrial trawlers alone would render the 200-strong fleet of high-seas bottom

Table 1. Fishing subsidy type, amount, main beneficiaries, and effect on capacity[a].

Subsidy type	*Amount (US$ billion)*	*Main beneficiary[b]*	*Effect on capacity[c]*
Fishing-port construction and renovation	8.0	large	bad
Fuel	6.3	large	bad
Fisheries management programs and services	5.8	large	good
Fishery development projects and support services	2.5	small	bad
Boat construction, renewal, and modernization	1.9	large	bad
Fisher assistance	1.7	small	ugly
Marketing support, processing, storage, infrastructure	1.6	small/large	bad
Fishing access agreements	1.0	large	bad
Fishery research and development	0.9	large	good
Rural fishers community development	0.9	small	ugly
Vessel buyback	0.9	large	ugly
Tax exemption	0.7	large	bad

[a] *Adapted from Sumaila and Pauly (2006).*
[b] *Large or small-scale fishing sector.*
[c] *The categories (good, bad, ugly) refer to their effect on fleet growth and hence overfishing: good subsidies do not increase the size of the fleet, bad do, and the effect of ugly subsidies depends on the context (see Sumaila & Pauly 2007).*

trawlers unprofitable, sparing the reef habitat and bycatch these industrial boats generate in their pursuit of overfished deep sea species (Sumaila 2007). The retirement of the high-seas bottom trawlers would relieve pressure on at least 3 poster species for the sustainable-seafood movement: orange roughy (*Hoplostethus atlanticus*), rockfish (*Sebastes* spp.), and Patagonian toothfish (*Dissostichus elegenoides*), all of which are listed in the avoid category on seafood wallet cards and are eschewed by eco-friendly chefs 2006.

Moreover, the dearth in supply could make creating market infrastructure for alternative species from the small-scale sector economically viable.

Market-based sustainable seafood initiatives and the elimination of harmful fisheries subsidies are not incompatible goals, but conservation funding for fisheries is scarce. Since 1999 a minimum of $6.2 million/year has funded market-based sustainable seafood initiatives, whereas projects to abolish harmful fisheries subsidies are likely to have received <$150,000 annually over this same period. Given the role of the state in subsidizing large-scale, destructive fisheries, funding toward political reforms would trump consumer-oriented efforts to change the marketplace. The limited money for fisheries conservation should go toward efforts that yield the highest sustainability returns on conservation investments.

Nonprofit marine conservation groups could use this money to launch large-scale public relations campaigns and to fund groups to lobby against subsidies for industrial fisheries. This effort could include advocacy groups of small-scale fishers, recreational anglers, and fiscal conservatives opposed to industrial-fishing subsidies. Nonprofits could also fund investigations to expose the flow of subsidy monies. Groups opposed to farm subsidies, for instance, track government dollars to individual farms and disclose the farm's name, location, and amount received in a given year via an on-line database (http://farm.ewg.org/farm/). A global database could reveal the extent of fisheries subsidies (e.g., the $300 million in subsidies that went to European drift netters to convert to less-damaging fishing gear) and describe what happened with the money (e.g., most Italian drift-net operators pocketed the money and continue to fish illegally; Oceana 2005).

Ecolabeling, consumer seafood guides, and even boycotts have not resulted in accelerated progress in fisheries policies (Bridgespan Group 2005; Jacquet & Pauly 2007), partially because these initiatives are not appropriate for data-deficient, small-scale fisheries. More than $37 million has been invested in sustainable seafood initiatives to date, from which more than 12 million small-scale fishers worldwide will never benefit. It is time to consider funding of this magnitude for a more equitable and fundamental market-based approach that will yield results on the water: the elimination of harmful fisheries subsidies.

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