

# Too Many Fishing Boats, Too Few Fish: Can Trade Laws Trim Subsidies and Restore the Balance in Global Fisheries?

*Christopher D. Stone\**

## CONTENTS

Introduction .....	506
I. Background .....	506
A. Limitations of Conventional Fisheries Management Policies .....	510
1. "Overcapitalization" and Excess Capacity .....	512
2. Subsidies in Fishing .....	515
a. The FAO "Special Chapter" .....	516
II. Application of Trade Laws .....	519
A. Bringing Fish within the Agricultural Agreement Framework .....	520
B. Countervailing Duties Under Domestic Trade Laws .....	522
C. Direct Challenges Through the World Trade Organization .....	523
1. Subsidies .....	523
a. Clear Subsidies .....	524
b. Borderline Subsidies .....	524
c. "Implicit Subsidies" .....	526
2. Prohibited Subsidies .....	529
3. Actionable Subsidies .....	529
4. Non-Actionable Subsidies .....	531
a. Subsidies Pursuant to International Obligations .....	532
b. Nonobligatory Productivity-Enhancing Subsidies .....	533
c. Catch-Reducing Subsidies .....	534

---

Copyright © 1997 by ECOLOGY LAW QUARTERLY

\* Roy P. Crocker Professor of Law, University of Southern California. Paper prepared with the support of the Global Environment and Trade Study (GETS), New Haven, Conn. The author would like to thank Steven Charnovitz, Howard Chang, Michael Knoll, Matteo J. Milazzo, and Eric Talley for their comments.

III. Conclusion .....	535
IV. Appendix .....	538
A. Cost-Reducing Subsidies .....	541
B. Stock-Enhancement Subsidies .....	542
C. Effort-Constrainting Subsidies .....	542

## INTRODUCTION

The world's capture fisheries are being over-exploited. A reduction in this pressure, allowing stocks to rebuild, would increase productivity and maximize revenues in the long run. Fisheries managers are utilizing an array of techniques, including restraints on time, place, gear, and catch, to dampen the level of harvest. But the chronic overhang of excess capital and labor undermine those efforts. There is no single remedy. However, subsidies are a crucial culprit. Fishing subsidies, estimated at tens of billions of dollars annually world-wide, lure and shelter the excessive catch capacity. As a consequence, there is a growing movement, in a variety of fora, to call fishery subsidies and "overcapacity" into question.

This Article proposes that trade disciplines should be more aggressively used in the campaign to reduce the pressure on stocks. Fish products constitute one of the major components in world trade. Many government programs designed to support fishers appear to violate existing trade laws. There are, of course, major barriers to any assault on practices as widespread and entrenched as fishing subsidies. But inroads have been made, or are in the offing, even in the farm sector. In the fishing sector, the potential support of resource and environmental constituencies brightens the prospect for using trade law as an instrument of reform.

## I

### BACKGROUND

Across the world, fisheries, once imagined to be inexhaustible, are showing signs of strain. More and more of the world's major fishing regions and fish stocks are listed as "overfished" or "depleted."<sup>1</sup> The most highly prized stocks have been hardest hit.<sup>2</sup> As the most

1. United Nations Food And Agricultural Organization (FAO), *The State of the World Fisheries and Aquaculture* 8-11 (1995) [hereinafter *SOFIA* 1995]. In 1993, 60% of the world's marine stocks on which data were available were classified as either "fully to heavily exploited" (44%) or "overexploited" (16%). *Id.* at 8. Another 6% were characterized as "depleted" and 3% as in recovery from overfishing. *Id.* Categories are all based on conjectures as to maximum sustainable yield (MSY). *See* Appendix.

2. Western Atlantic Bluefin tuna have dwindled from 250,000 to 22,000 in two decades. They have been proposed for listing as an endangered species. Anne Swardson, *Net Losses: Fishing Decimating Oceans' "Unlimited" Bounty*, *WASH. POST*, August 14, 1994, at A1.

fecund areas collapse or decline, modern vessels, outfitted with high-tech devices for locating, catching, and on-board processing, open up increasingly remote areas for exploitation. Meanwhile, many older, conventional vessels, not fitted for frontiers, redouble pressure inward, netting ever-smaller and less optimal prey.<sup>3</sup> Precincts of marine sanctuaries, in which stocks can hide and recover, have shrunk in response; all major trawlable shelves are being trawled.<sup>4</sup> At the same time, pollution, development, and other pressures of human habitation assault coastal wetlands and mangrove areas, impairing their service as natural spawning grounds and nurseries for the replenishment of marine stocks.

Not all the data are dire. Since 1950, global fish production increased from 20 million to 110 million tons.<sup>5</sup> Over the past decade, a striking increase in aquaculture, which now amounts to about 19% of the total world fish production, significantly augmented the modest over-all gains in capture fisheries.<sup>6</sup> Indeed, over the past fifty years, the increase in total fish harvest actually outpaced the increase in human population.<sup>7</sup>

Nonetheless, there is almost universal agreement that these facially positive statistics mask unsettling trends. The yield from marine capture fisheries (the dominant sector) shows signs of stagnation; further sustainable expansion is unlikely.<sup>8</sup> The fact that the level

---

3. See S. Garcia, *Seasonal Trawling Bans can be Very Successful in Heavily Overfished Areas: The "Cypress Effect,"* Fishbyte, Apr. 1986, at 7-8.

4. D. Pauly and V. Christensen, *Primary Production Required to Sustain Global Fisheries* (letter), 374 *Nature* 255, 257 (1995). The reference is to de facto sanctuaries as distinct from the few "no-fishing" zones that are legally mandated.

5. Food and Agricultural Organization of the United Nations, *Global Fishery Production in 1994* (visited on May 24, 1997):

<<http://www.fao.org/waicent/faoinfo/fishery/catch/catch94a.htm>>

[hereinafter FAO, *Global Fisheries Production in 1994*]. The most recent data shows a continual inching up in all categories: marine, mariculture, inland and aquaculture.

6. FAO, *Global Fishery Production 1994*. Indeed, an astounding one quarter of the fish used for food (as opposed to fertilizer, etc.) is now accounted for by fish farming. Food and Agriculture Organization of the United Nations, Fisheries Department, *Projection of World Fishery Production in 2010* (visited on May 24, 1997) <<http://www.fao.org/waicent/faoinfo/fishery/highligh/2010.htm>> [hereinafter FAO, *Fishery Production in 2010*]. The shift towards aquaculture and mariculture is not a bad sign per se. To some extent it parallels the shift from foraging to agriculture, and reflects the relative strength of property rights over open access regimes. However, further study should examine whether the associated environmental costs of fish farming is higher than that caused by marginal capture fishing.

7. FAO, *Global Fishery Production in 1994*, Figure 1 (indicating that between 1950 and 1994 rose from approximately 7 kg/person to 14). Because an appreciable share of the catch spoils, and because advances have been made over the past decades in fish handling, trends in per capita landings presumably understate advances in per capita availability to consumers.

8. Of course the prospects for expansion of yield on a sustainable basis will vary with the strength of management regimes that arise. The FAO's most recent pessimistic esti-

of effort has been expanding far faster than catch supports this pessimism.<sup>9</sup> Moreover, the figures obscure a pronounced shift in catch quality. At the docks, species that were formerly throw-backs are replacing high-value species.<sup>10</sup> Five low-value species, only one of them eaten by humans (the rest being used for animal feed and fertilizer) account for the entire increase in catch since 1983.<sup>11</sup> Juveniles compose an increasing percentage of the harvest.<sup>12</sup> In addition, our brash invasion of deep sea spaces, ecosystems about which we know very little, has produced portents of collapse, with uncertain threats to the food web and biodiversity.<sup>13</sup> At the same time, increasing reports of high environmental costs and doubts about the long-term sustainability of many of the enterprises cloud the promise of aquaculture.<sup>14</sup>

The severity of the situation is uncertain. A full critique of global fisheries would require multiple perspectives. The prognosis shifts depending on whether one adopts the economic perspective of *consumer satisfaction* (assuming tastes as a given, and maximizing net revenue),<sup>15</sup> *food security* (maximizing a proxy for nutrition, such as protein

---

mate for 2010 projects total production at 107 million metric tons (mmt) of which the capture sector will contribute 80 mmt; its most recent optimistic estimate for 2010 projects total production of 144 mmt of which the capture sector will contribute 105 mmt. FAO, *Fishery Production in 2010*.

9. Reference to technology-indexed fleet capacity illustrates this trend. For example, between 1970 and 1989 the registered tonnage of the major vessel fleet increased by 87%, and despite increased support of spotter planes, wider nets, factory and mother ships, the landings increased by only 46%. S.M. Garcia and C. Newton, Current Situation, Trends and Prospects in World Capture Fisheries 19 and Table 3 (June 14-16, 1994) (unpublished manuscript, on file with *Ecology Law Quarterly*). When a "technology coefficient" is introduced to make allowances for advances in technology, the decline per vessel (ton) was more dramatic, from 6.4 to 2.1 tons of fish landed per gross ton of registered vessel. *Id.* Table 4.

10. Nonetheless, between 1970 and 1989 the value of capture sector landings increased more (107%) than the increase in total landings (46%). *Id.* The authors also report that revenue per gross registered ton (GRT) increased from \$2100 to \$2300 over the same period. *Id.*

11. *Fishing Crisis in World's Oceans: 90 Nations at U.N. Conference to Consider Limits*, Int'l Herald Trib., Aug. 15, 1994, available in NEXIS, WORLD library, ALLNWS file. However, tastes shift continuously, and a shift in fishing practices that led to food exploitation of "lower" species could conceivably produce the same protein, ton for ton, as the current mix of catch. (discussed below).

12. See Garcia, *supra* note 3, at 8.

13. See William J. Broad, *Creatures of the Deep Find their Way to the Table*, N.Y. Times, Dec. 26, 1995, at C1. (Deep seas fisheries already showing signs of collapse, with uncertain ramifications on food web).

14. See, e.g., Seth Mydans, *Thai Shrimp Farmers Facing Ecologists' Fury*, N.Y. TIMES, April 28, 1996, at A3.

15. Also, economists and biologists have parted on the optimal level of fishing. Marine biologists have classically stressed maximum sustainable biological yield (MSBY). MSBY is the quantity that can be taken without depleting the stock. Because stocks are themselves subject to fluctuation, the amount would presumably not be constant from year to year. See A.A. Rosenberg et al., *Achieving Sustainable Use of Renewable Resources*, 263

per dollar of effort, over the long-term), *biodiversity* (maximizing a proxy for species or ecological diversity), or *regional development* (making special allowances for regions particularly dependent on fish for employment and food).

For example, from the economic perspective of consumer satisfaction, a catch that is constant in terms of tonnage and capture costs, but that sells for less on the market, is a set-back. However, from the perspective of feeding the world's burgeoning populations, an increase in tonnage, even at some decline in market value, may be desirable, as long as it represents a sustainable expansion in protein. Alternatively, a protein maximizing strategy would presumably exploit the higher reserves of lower valued species that tend to be lower on the food web, rather than the more highly valued ("tastier") species, such as swordfish and tuna, that tend to be near the top of the food chain. Such a protein maximizing strategy would presumably exploit the high reserves of lower value species as input to other foods (as fertilizer and "feed") rather than as direct human fare.<sup>16</sup> On the other hand, if one resolves to move lower down the food chain to promote a strategy of protein maximization, one risks destabilizing keystone species and processes, and thus impairing both biodiversity and productivity in unforeseen ways.

Hence, how one evaluates the global fishing situation depends upon which of these objectives one adopts, and upon judgments as to their interrelationship. But it is safe to say that no one is satisfied from any of these perspectives. Indeed, fishing is an area in which even resource optimists concede the need for significant reevaluation of policies.<sup>17</sup> The most provocative estimate remains this: FAO calcu-

---

SCIENCE 828 (1993). However, because the cost per unit of harvest tends to increase as the stock declines, the economically "efficient" level of fishing (identified with maximum net revenues from the stock, MNR) is presumed to be lower than MSBY. See Appendix; ROSS D. ECKERT, *THE ENCLOSURE OF OCEAN RESOURCES* 123 (1979); MIKE HOLDEN, *THE COMMON FISHERIES POLICY* 169-185 (1994).

16. To illustrate, a food security policy would presumably increase research into the commercial prospects of Antarctic krill, whose total weight, worldwide, has been estimated (at the high end) at 1.35 billion tons (five times the aggregate weight of all the humans on earth). Jane E. Stevens, *The Secret Lives of Krill: Dismantling the Myths of Southern Oceans*, *SEA FRONTIERS*, June 2, 1995, at 26, 27. These reserves have thus far been exploited only at moderate levels. *Id.* Unless specially prepared, krill are unappetizing (their shells concentrate fluorides out of the sea), and if not processed within three hours are unfit for human consumption. *Id.* at 31. This means that their huge potential is principally as food stock. That is not to dismiss their significance for food security, however. Approximately 30% of the world catch is used as meal, much of it in aquaculture. FAO, *Fishery Production in 1994*, Figure 1. Fishmeal and oil amounted to an estimated 34.7 million metric tons in 1994. *Id.*

17. See Kent Jeffreys, *Rescuing the Oceans*, in *The True State of the Planet* 295 (Ronald Bailey, ed., 1995). Income from marine fishing reportedly accounts for about 1% of the global economy. PETER WEBER, *NET LOSS* 6 (1994) (observing, however, that the effects are of the fishing industry vary depending on its local importance.)

lated that if fishing pressures relaxed to allow the rehabilitation of stocks, the catch of capture fishers could stabilize at a level twenty tons higher globally. That increase could add \$16 billion to gross revenues annually, and at a lower cost to the industry and environment.<sup>18</sup>

*A. The Limitations of Conventional Fisheries Management Policies*

The effort to manage fisheries has a long history and has utilized a wide array of techniques. Regulatory measures have included restrictions on quarry, locale, gear, and seasons, and more recently, experiments with tradable catch quotas.<sup>19</sup>

However, the root problem facing regulators has always been open access. Fishing grounds are unrestricted "commons" areas, and the ownership of a fish is not allocated until the moment of capture. As a result, each fisher is indifferent to the costs that removal of the resource imposes on other members of the fleet, and investment in fishing proceeds to the point at which each fisher can no longer recover his own opportunity costs.<sup>20</sup> If there are too many vessels, the temptation to cheat on year end catch rules is great. Hence, restraints on entry are crucial to regulators' success.

The recognition of coastal state jurisdiction over an adjacent 200-mile fishery zone<sup>21</sup> promised relief, inasmuch as the state gained the power to exclude foreign fleets, at least when there were no surplus stocks.<sup>22</sup> But efforts to exploit the potential of the managerial zones have been uneven and slow. Some nations that reduced pressure by excluding foreign vessels simply permitted local fleets to expand to replace or augment the void created by foreign fleet expulsion; virtual open access and its symptoms persist.<sup>23</sup>

---

18. Food and Agriculture Organization of the United Nations, *Marine Fisheries and the Law of the Sea: A Decade of Change*, in *The State of Food and Agriculture 1992* 29-30 (1992) [hereinafter SOFA 1992] (using the 1989 global fisheries data). In the U.S., the Department of Commerce has estimated that rational fisheries management, including a rehabilitation permitting reduction in pressure, would increase domestic fishing revenues \$2.9 billion a year. U.S. DEP'T OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NOAA STRATEGIC PLAN: A VISION FOR 2005 89 (1996).

19. See Jeffreys, *supra* note 17, at 309-12.

20. See Appendix.

21. Third United Nations Conference on the Law of the Sea, U.N. Doc. A/Conf.57/122, *reprinted in* Official Records volume XVII at 151, Sales No. E.84.V.3 (1984) [hereinafter UNCLOS]

22. Third United Nations Conference on the Law of the Sea, U.N. Doc. A/Conf.62/122, *reprinted in* Official Records volume XVII.

23. For the most part, the coastal states continued to treat their new resource as a free access good. Some of the distant water fleets refocused efforts to the high seas, while others negotiated entry into coastal Exclusive Economic Zones (EEZs). See Rory McLeod, Market Access Issues for the New Zealand Seafood Trade 14 (New Zealand Fishing Industry Board, 1996). Giulio Pontecorvo, *The Enclosure of the Marine Commons: Adjustment and Redistribution in World Fisheries*, 12 *Marine Policy* 361 (1988).

Even where enclosure led to promulgation of a new bundle of regulations, the new rules have often proven inadequate and even perverse. For example, the shortening of seasons have commonly led to "fishing Olympics." Fishers simply attack with larger and ever more lethal vessels "to get while the getting is good." When the season ends, the added catch capacity is either laid up or redeployed to plunder another quick harvest somewhere else. Shortened seasons also produce bulges in production where smooth production would be optimal. Because fish spoil, most of the catch must be marketed as canned or frozen rather than as high-priced fresh fish.

Similarly, government imposed limits on vessels and gear have proven ineffectual or worse. Prohibiting the most efficient means of fishing simply raises unit costs without assuring a reduction in catch. Quotas (Total allowable Catches (TACs)) have also proven flawed. Industry commonly pressures managers to set the TACs too high. Moreover, because of inadequate monitoring, the immediate effect of catch limits is to deter vessels from landing, or, more accurately, *reporting* any excess. It is widely assumed that a considerable quantity of excess catch is either thrown back (much of it to die)<sup>24</sup> or landed as contraband resources for the "black fish" market.<sup>25</sup>

To cite these infirmities is not to dismiss fisheries zones and their managers. But even the successes are double-edged. For example, regulatory achievements, particularly limits to entry within the fisheries zones, may simply drive some vessels into the high seas areas to escape national regulatory reach. High seas catches, which constituted 5% of the harvest in the 1970s, rose to 10% in the 1980s.<sup>26</sup> Concern that plunderers of coastal waters might respond to the imposition of fisheries zones by turning their attentions to uncontrolled high seas areas produced several counter-measures, including resolutions against driftnetting,<sup>27</sup> the FAO Code of Good Practices,<sup>28</sup> and the

---

24. FAO does not estimate the mortality of cast-backs, which is a difficult figure to establish. SOFIA 1995 at 21.

25. The extent of illegal fishing is, by its very nature, uncertain, but believed to be substantial. It has been estimated that half the fish landed in England have been caught illegally. Richard North, *The Madness that Threatens our Oceans*, Daily Mail, August 5, 1994, available in NEXIS, WORLD library, ALLNWS file. According to a report by the European Commission, monitoring for violations is ineffective, jeopardizing the future of the industry. See *Fisheries: Member States Incapable of Controlling Fleets, Says Report*, EUROPEAN REPORT, EUROPEAN INFORMATION SERVICES, March 20, 1996, available in NEXIS, WORLD library, ALLWLD file.

26. SOFIA 1995 at 14. Also, many nations with a tradition in fishing and a heavily subsidized fishing fleet have managed to escape the dwindling stocks and toughening regulations by turning to the stocks of Africa and other less-regulated developing countries.

27. See, e.g., Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific (without Protocols), *opened for signature* November 23, 1989, 29 I.L.M. 1454 (1990); Large-Scale Pelagic Driftnet Fishing and Its Impact on the Living Marine Resources of the World's Oceans and Seas, G.A. Res. 225, U.N. GAOR, 44th Sess., Supp. No.

U.N. Convention on Highly Migratory and Straddling Stocks.<sup>29</sup> Despite their worthy ambitions, the impact of these measures remains to be demonstrated.

### 1. "Overcapitalization" and Excess Capacity

There is no single explanation for why fisheries management has not been more successful. Areas of overlapping jurisdiction and the high seas present special obstacles to multilateral cooperation. Even in areas of exclusive jurisdiction, inadequately understood nonanthropogenic variables, such as natural fluctuations in recruitment and temperature, frustrate proper management decisions. Regulatory measures, including catch limits, must pass through a gauntlet of attacks from entrenched fishing, shipbuilding, and allied support industries. Once limits are declared, monitoring violations presents a further challenge.

While many factors thus conspire to frustrate efforts at fisheries management, it has become popular recently to focus attention on "overcapitalization": too many vessels are chasing too few fish. There is some truth in the charge. But it is also misleading. While investment in vessels and other capital, such as port infrastructure and gear, may be specially problematic,<sup>30</sup> the excess is that of an *activity*, fishing, and not of *capital* alone. Industry pours labor, fuel, and other inputs, in addition to capital, into fishing in excess of what is required to achieve the appropriate level of harvest.

---

49, 85th plen. mtg., at 147, U.N. Doc. A/44/49 (1990); Large-Scale Pelagic Driftnet Fishing and Its Impact of the Living Marine Resources of the World's Oceans and Seas, G.A. Res. 215, U.N. GAOR, 46th Sess., Supp. No. 49, 79th plen. mtg., at 143, U.N. Doc. A/46/49 (1992).

28. Food and Agriculture Organization of the United Nations, *Code of Conduct for Responsible Fisheries*, (visited on May 25, 1997).

<[www.fao.org/WAICENT/faoinfo/fishery/agreem/codecond/codecon.htm](http://www.fao.org/WAICENT/faoinfo/fishery/agreem/codecond/codecon.htm)>.

29. *Draft Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, U.N. Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, 6th Sess., at 1, U.N. Doc. A/Conf.164/33 (1995) [hereinafter *Straddling Fish Stocks*].

30. There may be justification for singling out excessive capital and regarding it even more warily than other excessive inputs. Much of fishing capital (one has only to think of vessels and port infrastructure) is specific to an industry, and to a locale in some instances. Hence, once investments are made, each year there is pressure to turn the fleet out as long as operating costs (often subsidized, see *infra* Part I.B.) can be covered, whether the impact on the ever-fluctuating stock warrants the activity or not. Labor, which suffers its own limited mobility in the form of dependent fishing communities, is far more complex. Any solution to the problems caused by overcapacity must address facilitating an exit of both capital and labor, such as by worker retraining. See JOSHUA JOHN, *MANAGING REDUNDANCY IN OVEREXPLOITED FISHERIES* (World Bank Discussion Papers: Fisheries Series No. 24, 1994).



This is not to say that reducing fleets and other capacity and input factors will solve the problems. On the contrary, the strengthening and extending of conventional fisheries management will continue to warrant the greatest effort. However, as long as the catch capacity (all inputs considered) far exceeds the optimal, those caught up in the overhang, particularly underemployed fishermen and owners of older, unprofitable vessels that have to struggle just to break even, will resist and subvert regulatory efforts. All too often, the politics of excess capacity translates into the disregard of science and the slackening of needed reforms.<sup>31</sup>

Theoretically, “overcapacity” is a state in which *the value of inputs to fishing is greater than required for most efficiently achieving the desired level of fishing activity*. However there is little consensus on what would constitute the “right” capacity, or the “right” level of inputs, against which excess should be measured. For instance, the safe catch level for any stock is always controversial and fluctuates from year to year. In light of the uncertainties, it is not clear what level of fishing activity will net the “right” catch. It is simply unclear what inputs, many of which have long investment periods, are economically warranted. Even if it is coherent to claim that the present harvest could be caught with one-half the fleet tonnage,<sup>32</sup> focusing on the *physical* capacity while disregarding *costs* is not sensible. Surely it is not desirable to keep every vessel out to sea until its holds are 100% full if deploying a few more vessels, 90% full, would be cheaper.<sup>33</sup> The fact that newer vessels are considerably more efficient than their older competitors further complicates estimates of the necessary in-

---

31. See McLeod, *supra* note 23, at 21. Even the “science,” as represented by the estimates of safe catch levels by consultant scientists, has not been immune from the political pressures created by excessive capacity. See U.S. DEP’T OF COMMERCE, *supra* note 18, at 86.

32. Christopher Newton, U.N. Food and Agriculture Organization, *quoted in* William D. Moltanbano, *Fishing for Solutions to Depletion of Seafood Stocks*, L.A. TIMES, Mar. 11, 1995, at A2.

33. EUGENE H. BUCK, CRS REPORT FOR CONGRESS: OVERCAPITALIZATION IN THE U.S. COMMERCIAL FISHING INDUSTRY (Congressional Research Service, 1995) 7-8 stating that:

In reality, optimum fleet size to harvest the resource may necessitate certain “inefficiencies” such as the capacity of Alaska fishermen to adjust to wide fluctuations in anticipated salmon runs or the ability of marginal fishermen to shift among various seasonal fisheries. The appropriate level of capital depends on a number of highly variable and unpredictable factors—natural oceanic and atmospheric conditions that significantly affect the numbers of fish available and can fluctuate substantially between seasons. Consequently, current population assessments as well as future predictions are often problematic. . . . Without accurate population data, it is difficult to assess industry efficiency at any given time and, therefore, to determine the extent of overcapitalization.

In addition, small boats can reach stocks inaccessible to large boats, and vice-versa.

puts.<sup>34</sup> Moreover, as in any industry, there must be some idling of capacity—creation of apparent “excess”—in the normal displacement of outmoding investment.

The fact that fishing capacity is an artifact of regulation also complicates the definition of “excess.” Artificially shortened seasons and other restrictions in catch per vessel increase the number of vessels and other capacity factors that are “needed.” It is unclear how much of the “overcapacity” is an economically rational response to (suboptimal) regulation.<sup>35</sup> Some data suggest that the overbuilding has culminated and is undergoing, as one would expect, a degree of correction.<sup>36</sup>

The bottom line is that a direct estimate of the theoretically “correct” capacity is elusive. There are too many uncertainties to identify the “right” level of capacity to achieve the “right” level of activity. Nonetheless, the allegations of widespread overcapacity have an undeniable basis. First, there is the inefficiency that inevitably results from the competition to reduce free access goods to ownership. Second, as indicated above, some of the fisheries regulations unintentionally elicit economically redundant investment and consequently compound the excess. Finally, the industry has been the historical beneficiary of public subsidy. Subsidization lowers private costs at public expense, thereby increasing the investment in fishing beyond the level that market signals would warrant.

Thus, features of the industry and its environment, and the government subsidies in particular, fairly support the allegations of widespread overcapacity, even though it is impossible to put a dollar or tonnage figure on that excess.<sup>37</sup> This is not to say that all government

---

34. See McLeod, *supra* note 23, at 13. New vessels enjoy a catching power ratio of 1.5:1 relative to older vessels of the same size. The ratio rises to 3:1 for larger vessels. SOFIA 1995 at 23. FAO reports that some administrators require owners introducing new vessels to compensate owners of older vessels for their removal. *Id.*

35. Buck, *supra* note 33, at 8, points out that:

Fishermen anticipate that Federal, State or regional public bodies will eventually impose some sort of access controls. Such anticipation may motivate some individuals to enter the industry prematurely. Others may be deterred from leaving ailing fisheries and moving into more profitable new fisheries for fear of being denied significant quota shares if access control is adopted for their traditional fishery.

36. See Matteo J. Milazzo, Reexamining Subsidies in World Fisheries 59-61 (May 1997) (unpublished manuscript on file with *Ecology Law Quarterly*) (examining Lloyd's of London data on the world's fleet). During the last five years (for which there is data), there has been a decline in new ship construction (gross tonnage added). The average age of vessels in the world fleet is now over 18 years, or roughly the useful life of a vessel. SOFIA 1995 at 19-20.

37. Subsidization of operating costs, by artificially lowering the cost curve, shifts the supply curve and drives output beyond the efficient level. There is already a “subsidizing” transfer of public wealth to each catcher, and also presumptive overcapitalization where property rights are imperfectly established—wherever fish are, in effect, free access goods.

financial assistance programs induce excess catch capacity, or that they are all indefensible.<sup>38</sup> Moreover, given the present state of affairs, it is not clear that a mere withdrawal of catch-enhancing financial support would be an adequate response. Rehabilitation may require a more severe reduction in capacity, at least for a time period. Additional measures may be required to facilitate the disinvestment of relatively immobile capital and labor factors.<sup>39</sup> Nonetheless, a re-examination of fisheries subsidies, and the role they play in driving the dubious levels of harvest, is a key ingredient of reform.

## 2. *Subsidies in Fishing*

Gauging the amount of subsidies world-wide, or even on a nation-to-nation basis, is a formidable task. Many programs are involved. In various places and at various times, financial assistance to the fishing industry has included grants, low-cost loans and loan guarantees for new vessel construction and repair, subsidies to support the purchase of new gear, support for construction of cold storage and processing plants, support for fish prices and fishermen's wages, and the provision of marine insurance, harbor maintenance, and fuel discounts.

Observers standing outside government have attempted national or regional estimates of what it all comes to.<sup>40</sup> And some authoritative organizations have approached governments *directly* for the data. Most prominently, as early as the 1960s, and again in the 1970s, the Organization for Economic Cooperation and Development (OECD) canvassed its members to prepare Reports on Financial Assistance to the Fishing Industry. The results, although now outdated in detail, convey a sense of the range of support measures. Combined with other studies, OECD's results leave no doubt that financial support for the fishing industries is widespread and massive.<sup>41</sup> In addition to the OECD, the WTO is *supposed* to be collecting contemporary

---

More assets will be dedicated to harvesting than is efficient in the free-for-all competition. See Appendix.

38. See *infra* Part II.C.4.

39. See John, *supra* note 30.

40. For example, Canada's governmental support for the Atlantic fisheries alone has been estimated at C\$ 8 billion for the decade beginning in 1981. That is roughly equal to the value of the entire landed catch. William E. Schrank, *Extended Fisheries Jurisdiction: Origin of the Current Crises in Atlantic Canada's Fisheries*, 19 MARINE POLICY 285, 291 (1995).

41. See ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, FINANCIAL SUPPORT TO THE FISHING INDUSTRY OF OECD MEMBER COUNTRIES (1965) [hereinafter OECD 1965]; ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, FINANCIAL SUPPORT TO THE FISHING INDUSTRY OF OECD MEMBER COUNTRIES (1980) [hereinafter OECD 1980]. Between 1983 and 1990 European Economic Community (EEC) support for member fishers (independent of national government support) rose from US \$80 million to US \$580 million. SOFA 1992 at 149. 20% was for ship building

data.<sup>42</sup> As of this date, however, the submissions have been paltry at best.<sup>43</sup>

All such direct efforts to acquire subsidy data are frustrated by the variety, magnitude and scope of subsidies, combined with the reluctance of governments to compile and come forward with fully comprehensive figures. This reluctance is not entirely a matter of the conventional concealment of data from outsiders. A subsidizing government may not know the crucial figures itself. Governments only partially budget, or do not budget at all, certain subsidies, such as the government's cost for a portfolio of loan guarantees. Other subsidies take the form of a general policy commitment to forgive government loans to firms that are failing.<sup>44</sup> U.S. legislation has gone as far as to "bail out" vessels seized by foreign nations for fishing infractions.<sup>45</sup> How is one to begin to monetize such risk-shifting supports, which may never make their way into government fisheries budgets but certainly affect the level of economic activity?

*a. The FAO "Special Chapter"*

In default of a direct window into subsidies, item by item and government to government, the most ambitious and authoritative effort to identify subsidies is a 1993 study (literally Special Chapter), undertaken for the FAO. The FAO's attempt was indirect. Rather than query each government on its financial support, the author, Francis Christy, Jr., inferred the magnitude of government support through an industry profile that subtracted gross costs from gross revenues on a global basis. Employing 1989 data, Christy estimated gross revenues from marine fisheries worldwide at \$70 billion<sup>46</sup> and operating costs at

---

and renovation. Japan reported that in 1990 the credit balance to fisheries from government and commercial sectors combined was approximately US \$19 billion. *Id.* at 149-50.

42. The provision for a Notification of Subsidies under the WTO Agreement on Subsidies and Countervailing Measures (SCM) [hereinafter SCM] applies to fisheries as well as other sectors. Office of the U.S. Trade Representative, Executive Office of the President, *Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Agreement on Agriculture*, Annex 1, MTN/FA II-A1A-3 at 16 (Dec. 15, 1993). *See also*, Office of the U.S. Trade Representative, Executive Office of the President, *Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Agreement on Subsidies and Countervailing Measures*, MTN/FAV-13 at 31 (Dec. 15, 1993).

43. There is no indication that the United States has submitted any data.

44. Japan has explicitly acknowledged what may be true of many countries: that the government financing system supports businesses in financial difficulty by assuming their liabilities. Indeed, "the amount of liability taken over by the government has been substantial in recent years due to the severe economic status of the fishing industry." SOFA 1992 at 149.

45. The Fisherman's Protective Act provides that, should a foreign country seize or fine the owners of a U.S. vessel for alleged infringement of domestic fishery management requirements, the U.S. will, under certain circumstances, reimburse the fine, fee or other direct charge paid to secure the vessel's release. *See* 22 U.S.C. §§ 1971-1973 (1997).

46. SOFA 1992 at 159-60.

\$92.2 billion.<sup>47</sup> This indicated an annual operating deficit of \$22 billion before accounting for capital costs. When the study added estimated capital costs (\$32 billion) to the estimated operating costs, it concluded that the global economy spent about \$124 billion to land \$70 billion worth of fish, an apparent \$54 billion deficit. The widely reported inference was that the fishing industry was being subsidized \$54 billion a year.<sup>48</sup>

The \$54 billion figure is so startling as to arouse some skepticism. To begin with, the equation of deficits with subsidies is unwarranted unless no portion of the losses are being borne by firms.<sup>49</sup> Moreover, as the author is the first to acknowledge, there are major obstacles to constructing a reliable set of fisheries statistics.<sup>50</sup> In particular, the estimated revenues (\$70 billion) may be too low. Many catches simply go unreported because there are so many landing spots stretched across so lengthy a coastline in much of the world.<sup>51</sup> In addition, restrictions such as catch quotas and seasons provide the fishers that violate those regulations an incentive to under-report. By contrast, there are few incentives to over-report. Hence, one presumes that official reports systematically understate revenues from year to year. As a result, the actual fisheries revenue must be higher and the subsidy figures correspondingly lower than Christy's estimates. To illustrate, if 1989 costs were \$124 billion and the actual revenues \$100 billion, then the level of (largely subsidized) deficit would fall to \$24 billion.

Christy may also have overstated the subsidy for capital costs. He derived the \$32 billion figure by estimating the replacement value of the fleet (\$320 billion), and applying a 10% return to impute an opportunity cost.<sup>52</sup> One might well question the propriety of using the costs of replacing an aging fleet as the basis for valuing industry capital, particularly if we assume that the fleet is, or ought to be, in partial liquidation.<sup>53</sup> The *investment* in the fleet would be better represented by market value: the amount owners, many of whom hold aging ves-

---

47. SOFA 1992 at 145.

48. In contrast to the many people who argue that the study demonstrates a \$54 billion "subsidy," Christy more accurately states that his figure is a deficit, most of which subsidies are presumed to cover. *Id.* Thus, the subsidy may not cover all of the deficit, diminishing fishers' earnings.

49. Christy, as distinct from many who cite the study, recognizes that his figure is a deficit, "most of which" subsidies "are presumed to cover." SOFA 1992 at 159-60. Some portion of the government underwritten losses are presumably recaptured in fees. *See supra* note 22.

50. SOFA 1992 at 146.

51. *Id.* The FAO uses a presumed market value for each species to calculate estimated revenue. *Id.*

52. *Id.*

53. Nor should one assume that governments intend to replace retired capacity on a ton for ton (or even catch-capacity for catch-capacity) basis.

sels, would actually receive on sale, an amount that captures expected cash flows from operation.<sup>54</sup> Hence, even if the presumed 10% return to capital is accepted, the estimated asset value (\$320 billion), and the linked "subsidy" both probably require downward revision.

On the other hand, it is important to note that the FAO did not address at least three major categories of subsidy, each of which would warrant an adjustment upward. The first category is government support through a wide variety of soft, unbudgeted commitments, such as relief for firms and fishers who fall on hard times.<sup>55</sup> Second are environmental externalities, including the ravaging of ecosystems and the deaths of nontargeted sea life. The fact that the price of the product does not include these social costs amounts to a "subsidy" of the fishing industry from an economic point of view.<sup>56</sup> The third area includes unaccounted-for resource rents. Under an ideal resource policy, fishermen would pay a fee calculated to constrict the harvest to a level that maximized the stock's long-term value to the society. Some coastal nations presently confront fishers with such a charge in the form of taxes, license charges, or government auctioned quotas.<sup>57</sup> However, governments "subsidize" a fisher wherever the levy falls short of the optimal, which is always the case in the high seas beyond national jurisdiction.<sup>58</sup>

For all these reasons, FAO's well-publicized estimate of global subsidies could be off in either direction, depending upon how one resolves uncertainties both in data and in definition. But whether the actual figure is less or more than the FAO's \$54 billion, there is every reason to believe that the sum is positive and large enough to demand considerable policy attention.<sup>59</sup> We are not only taking too many fish

---

54. The cash flow will of course vary with the level of subsidy.

55. See *infra* Part II.C.1.b.

56. A full accounting for environmental losses, including values such as biodiversity that are not priced in markets, would require appeal to some contingent valuation technique. The estimated amount would inevitably be controversial. Nonetheless, in principle the subsidy is real and likely to be appreciable.

57. For a comparison of the relative merits of control through landing taxes and merchantable quotas, see Terry Heaps and John F. Helliwell, "The Taxation of Natural Resources" in 1 ALAN J. AUERBACH AND MARTIN FELDSTEIN, *HANDBOOK OF PUBLIC ECONOMICS* 430-40 (1985).

58. See SOFA 1992 at 151. Not making the firm pay the natural resource cost is an economic subsidy, but, as discussed in the text below Part II.C.3.c, is not necessarily a "subsidy" under the SCM. Some commentators include protectionist measures as a fourth sort of "subsidy" untallied by the Special Chapter: around the world domestic fishing industries benefit from tariff and non-tariff barriers. As distinct from pure subsidies, these measures benefit domestic sellers over importers (by taxing domestic consumers). The global effect may be to reduce fishing effort because they raise rather than lower prices to consumers.

59. Milazzo, *supra* note 36, at 86, estimates current global fisheries subsidies (of capacity and effort-enhancing character) from a low of US \$11 billion to a high of \$21.5 billion.

to maintain long-term sustainability, we are paying an unnecessarily high price, both in terms of catch costs and natural resource capital, in the bargain.

## II

### APPLICATION OF TRADE LAWS

Whatever the exact magnitude of fisheries subsidies, the threat they pose has not gone entirely unchallenged. The European Union (EU) instituted a policy as early as 1983 to cut back on subsidies for vessel construction.<sup>60</sup> The Working Group on Oceans of the Commission on Sustainable Development (CSD) formally urged governments to reduce subsidies to the fishing industry.<sup>61</sup> The Asia-Pacific Economic Cooperation (APEC) approved a four year fisheries trade study that will address the subsidies issue.<sup>62</sup>

This Article addresses the question of the role that trade laws could, and should play in challenging fisheries subsidization and relieving pressures on stocks. Of course, the primary and direct concern of trade disciplines is to eliminate distortions in trade law not to preserve resources. The fact that much of the motivation to reduce subsidization comes from resource and environment factions may suggest that the problem be addressed directly in fisheries management and other nontrade fora. Nonetheless, subsidization is a concern of trade law, and there is no reason why trade laws should manifest that concern with less vigilance in fisheries than in any other sector.

Fishing products constitute one of the major components of world trade, with a value of approximately US \$50 billion,<sup>63</sup>—over 11% of the world trade in agriculture.<sup>64</sup> Among the developing countries, fish trade plays a particularly large and increasing role in garnering foreign exchange. As a group, the developing countries earned \$11 billion from nondomestic fish sales in 1993, nearly twice that of

---

60. The history of the EC's restructuring is discussed in Holden, *supra* note 15, at 19-33. Guidance targets have been revised periodically but effective agreement remains elusive. See *Fisheries Council Ministers Agree Five Year Plan to Save Fish Stocks*, EUROPEAN REPORT, EUROPEAN INFORMATION SERVICE, April 16, 1997, available in NEXIS, WORLD library, ALLWLD file (discussing EU adoption of compromise proposal to cut fleet capacity up to 30%, but indicating United Kingdom intention to resist implementation pending satisfactory resolution of quota jumping).

61. *Protection of the Oceans, All Kinds of Seas, Including Enclosed and Semi-enclosed Areas, and Coastal States and the Protection, Rational Use and Development of Their Living Resources: Report of the Secretary-General*, U.N. ESCOR, Comm. on Sustainable Development, 4th Sess., at 13, U.N. Doc. E/CN.17/1996/3 (1996).

62. *Summary Conclusions of the Seventh APEC Fisheries Working Group Meeting*, Asia-Pacific Economic Cooperation, Seventh Fisheries Working Group Meeting, Item 6.2 (May 29-31, 1996) (photocopy on file with *Ecology Law Quarterly*).

63. SOFIA 1995 at 32.

64. The 11% figure is for 1990. See Garcia and Newton, *supra* note 9, at 9, who also indicate that the value of fish trade increased at a faster rate than agriculture in general.

the next major crop (coffee) and dwarfing revenues from the other traditional cash crops of banana, rubber, tea, meat and rice.<sup>65</sup> China's self-pronounced plan to become a "fishing superpower" includes the goal of exporting \$4 billion in capture fish products by 2000.<sup>66</sup> Thus, trade and over-fishing are linked. Those concerned with over-fishing must consider whether trade law's anti-subsidy disciplines may not be a crucial part of the remedy.

*A. Bringing Fish Within the Agricultural Agreement Framework*

One major avenue of trade law has been blocked, at least temporarily. The recently concluded Uruguay Round Agreement on Agriculture (hereinafter URAA), which aimed at progressively and substantially reducing agricultural subsidies in general might have included fish and fisheries products. But proposals to do so failed to overcome the resistance of some major fishing nations. The final document expressly excludes fish products.<sup>67</sup> The unwillingness of the URAA negotiators to confront fish subsidies is regrettable and perhaps merits revisiting by the WTO Membership in the future.

The URAA establishes a framework for identifying and rolling back each country's Aggregate Measure of Support (AMS). Subsidies that have minimal effects on trade or production are exempt. The URAA does not explicitly *prohibit* unexempted subsidies. Instead, an aggrieved importing Member may apply countervailing duties (CVDs), which are otherwise GATT-illegal, against the subsidizing country.<sup>68</sup>

Surely, one could justify the inclusion of fish within the broader URAA. Presumably, cross-elasticity of demand between fish and other agricultural products is relatively high; distortions in the trade of one affect the trade of others. Additionally, aquaculture and mariculture, which are the most dramatically surging sectors of fishing, resemble farming more closely than they do "hunting." Moreover, fishing communities, like farming communities, present politicians with concentrations of single industry voters who must be weaned from a long tradition of dependence on subsidies. Furthermore, the experience gained and foundation formed during the URAA negotiations might prove useful in working towards an agreement on fishing. Finally, the formulation and administration of rules applicable to both agriculture

---

65. SOFIA 1995 at 32 (reporting that "developing countries as a group recorded an increasingly positive trade balance in fishery products, which reached \$13.4 billion in 1993").

66. See Wu Yunhe, *China Christens Plan to Be a Fishing Superpower*, CHINA DAILY, June 16-22, 1996, available in NEXIS, WORLD library, ALLNWS file.

67. URAA Annex 1 at 16.

68. URAA Art. 5.



and fisheries would be efficient; the combined approach might even advance a sense of "equal treatment" among traders in food products, and with it the willingness to comply with the WTO and its rulings.

On the other hand, those concerned about world fisheries have reason to be wary of tying the fate of fish subsidies to farm subsidies under the URAA. Despite an appearance of progress in the farm sector, it remains to be seen whether the URAA will have any real impact. The URAA is to be renegotiated starting in 1999. That process is certain to drag on for several years. To throw fish back into the negotiations will only ally the resistance of farmers with those of fishers. Moreover, the remedy under the URAA for non-exempt subsidies is limited to countervailing duties (CVDs), which must be instigated by an importer state whose domestic industry is injured by the subsidies.<sup>69</sup> Complaints and remedies under the SCM, the GATT's generally applicable anti-subsidy disciplines, are less restrictive. Thus, bringing fish subsidies under the default provisions of the general SCM has advantages over folding fish into the URAA. In fact, the URAA shields from challenge a number of programs, such as export subsidies, which would otherwise be vulnerable to SCM attack, and exempts many farm programs from attack until 2004 (the so-called "peace clause").<sup>70</sup> In addition, while the URAA exempts certain environmental subsidies made "as part of a well-defined environmental or conservation program,"<sup>71</sup> the exemptions are almost certainly narrower than those resource advocates would approve.<sup>72</sup>

Aside from the possible strategic disadvantages of bringing fish within the agricultural agreement, certain features of fishing warrant distinct treatment. For example, one might more readily exempt subsidies to enrich fishing grounds than one would "green light" subsidies to enrich the soil. A supporter of the exemption for fisheries would reason that fishermen exploit common fishing grounds, the maintenance of which has public goods attributes, while farmers ordinarily work their own property, on which they internalize the costs and benefits of inputs and activities. Also, differences between the modes of farming and fishing subsidies make the subsidization of fisheries more resistant to transparency and reform. For instance, agricultural subsidies typically take the form of schemes to protect specific crops through crop price support and tariffs. In contrast, a larger portion of

---

69. *Id.*

70. *Id.* Arts. 1(f) and 13. See Paul C. Rosenthal and Lynn E. Duff, *Reforming Global Trade in Agriculture*, in *THE WORLD TRADE ORGANIZATION* 145, 170-72 (Terence P. Stewart, ed., 1966).

71. *Id.* Annex 2, 12(I). See generally, Vinod Rege, *GATT Law and Environment-Related Issues Affecting the Trade of Developing Countries*, *JOURNAL OF WORLD TRADE*, June 1994, at 95, 154-55.

72. See *infra* Part II.C.4.

fisheries' subsidies goes into infrastructure and inputs, such as fuel, vessels, gear, and labor. Additionally, a subsidized fleet will often catch different fish in different seasons. This seasonal variation makes it difficult to identify whether a particular subsidy supports the catch of traded or untraded species.<sup>73</sup>

### B. Countervailing Duties Under Domestic Trade Laws

Challenges to fish subsidies do not require that fish be included as agriculture products under the URAA. Trade in fish, like the trade of any other primary product, remains subject to the general body of trade law. For example, an importing nation could challenge an exporter's fish subsidies by using its own domestic legislation to impose countervailing duties.<sup>74</sup> At least two U.S. cases illustrate this strategy. In 1986, the U.S. International Trade Administration determined that imports of Canadian groundfish should be subject to a countervailing duty on the basis of a slew of subsidy programs, including vessel assistance, investment tax credits, regional development and improvement loans, insurance premium prepayments, and loan guarantees.<sup>75</sup> In 1991, reacting to charges by U.S. salmon farmers, the U.S. International Trade Commission imposed an average 26% tariff on imports of fresh Norwegian farmed salmon. The Commission based its action on a finding that the U.S. industry suffered an injury that could be traced to Norway's low cost loans to its salmon farmers and its industry specific payroll tax deduction. Norway appealed to the GATT, but in 1994 the GATT Committee on Subsidies and Countervailing Measures upheld the Panel's decision supporting the U.S.<sup>76</sup> Complaints from Scotland and other European Union countries alleging subsidization and dumping in violation of WTO rules are currently prompting the European Commission (EC) to pressure Norway to limit support to its domestic salmon farming industry's production.<sup>77</sup>

---

73. A foundation for negotiating reform in agriculture was an OECD study of producer subsidy equivalents (PS) country by country and crop by crop. However, efforts to apply a comparable methodology to fish products run into enormous difficulties. McLeod, *supra* note 23, at 30-31.

74. For WTO members, domestic law measures, while available, are constrained by the disciplines of the Agreement on Subsidies and Countervailing Measures (SCM) Part V.

75. Final Affirmative Countervailing Duty Determination, Certain Fresh Atlantic Groundfish From Canada, 51 Fed. Reg. 10,041, 10,041-42 (1986) (certain benefits held to constitute subsidies within the meaning of section 701 of the Tariff Act of 1930, 19 U.S.C.S. § 1671 (West, WESTLAW through P.L. 105-4, approved March 3, 1997), warranting a CVD of 5.82% *ad valorem*).

76. GATT Dispute Panel Report, adopted by the Committee on Subsidies and Countervailing Measures, United States—Imposition of Countervailing Duties on Imports of Chilled Atlantic Salmon from Norway, in 2 HANDBOOK OF WTO/GATT DISPUTE SETTLEMENT, at 883 (1995) (Dec. 4, 1992).

77. *Fish Farming: A Promise of Halibut*, THE ECONOMIST, Aug. 31, 1996, at 50.

### C. Direct Challenges Through the World Trade Organization

The traditional remedy for an importing nation aggrieved by a subsidy was to institute its own “countervailing actions” unilaterally. The penalized exporter could appeal the CVDs under the GATT. In contrast, the SCM provides alternative remedies within the WTO from the first instance. The importer can institute a traditional countervailing measure based on Article VI along with a challenge based on the strengthened Prohibited or Actionable Subsidy provisions of Parts II and III, respectively.<sup>78</sup>

To support a challenge to fishery subsidies under the SCM structure, a challenger would have to overcome a series of barriers. The complainant must show that (a) there was a “subsidy” as defined in Article 1; that (b) the subsidy is *specific* as defined in Article 2; and that (c) the subsidy is either *prohibited* or *actionable* as distinct from *nonactionable*.<sup>79</sup> The complainant may also have to show that (d) a *prima facie* case of wrongful subsidization survives any exception or defense, such as a qualifying regional development program.<sup>80</sup> The following discussion examines some of the most significant problems that can be expected to arise.

#### 1. Subsidies

SCM’s Article 1 defines subsidies to include any benefit-conferring “form of income or price support”<sup>81</sup> and any benefit-conferring “financial contributions by a government or any public body within the territory of a Member i.e., where:”

(i) there are direct or potential (as in loan guarantees) transfers of funds; or

(ii) “government revenue that is otherwise due is foregone or not collected;. . . or

(iii) a government provides goods or services other than general infrastructure;” or

(iv) a government entrusts to a funding mechanism or ostensibly private body the supports illustrated in (i) - (iii).

---

78. The importing country has, however, to select one form of relief, either a countervailing duty or a countermeasure. SCM Art. 10, n.33. *See also id.* Art. 4, 7.

79. There is one caveat: a Member may initiate Article 9’s consultation provisions if its domestic industry suffers serious adverse effects “difficult to repair” in consequence of another Member’s programs that are technically “nonactionable” under Art. 8.2. *Id.* Art. 9.1.

80. *See Americo Beviglia Zampetti, The Uruguay Round Agreement on Subsidies, JOURNAL OF WORLD TRADE*, Dec. 1995, at 5, 13-4.

81. SCM Art. 1.1(a)(2), as those terms are defined in Article XVI of GATT 1994.

*a. Clear Subsidies*

Past studies of industry financial assistance record a slew of practices that would certainly constitute "subsidies" in the Article 1 sense. Low-rate loans, loan guarantees or outright grants for the purchase, construction, and repair of fishing vessels have probably been the most important such practices.<sup>82</sup> But Article 1 would also bring into question financial assistance ranging from price supports for fish products<sup>83</sup> and wages,<sup>84</sup> to grants to reduce prices of fishing gear and bait,<sup>85</sup> and to government purchases or subsidies for marine insurance<sup>86</sup> and fuel.<sup>87</sup> Article 1 might also cover harvest reducing expenditures such as paying owners to scrap vessels<sup>88</sup> or to reduce their harvest to meet catch limitations.<sup>89</sup> These practices could be construed as benefit-conferring transfers of funds per (i) even if the payments are too irregular to be classed as "income support."<sup>90</sup>

*b. Borderline Subsidies*

The question of whether other support measures are "subsidies" presents even more difficult issues of interpretation. These borderline measures include a host of expenditures that a government might want to classify as "general infrastructure" and therefore not a "subsidy" under Article I (iii). Port facilities and lighthouses probably escape "subsidy" characterization on that basis. Other public works expenditures, such as artificial reefs and wetlands rehabilitation, are

---

82. In any challenge, the nation defending its practices might be able to show, for example, that the cost of its loan guarantee program was not a subsidy considering the fees the nation collected and infrequency of defaults. I refer to grants to fishers for the purchase of loans, rather than grants direct to the shipbuilding industry. Support for the builders is more problematic, because a complainant would have to show how much of the benefit to the builder was passed along as a benefit to the fisher.

83. OECD 1980 at 12 (Canada); *id.* at 22 (Faeroe Islands).

84. *Id.* at 100 (guaranteeing minimum weekly income for fishers in Norway).

85. *Id.* at 103 (Norway).

86. *See id.* at 46 (Greece).

87. The FAO has estimated that governments pay out \$5 billion annually in fuel subsidies alone. William D. Montalbano, *Fishing for Solutions to Depletion of Seafood Stocks*, L.A. TIMES, March 11, 1995, at A2. A nation pursuing a policy of favoring fishers in the area of fuel payments might argue on either of two grounds that they are not subsidizing. First, where, as in the United States, fuel benefits are as available to farmers and pleasure boat owners as to fishermen, the benefits are not sufficiently "specific." Second, if the alleged subsidy takes the form of an exemption from taxes, and the tax funds go into a separate account for building and maintaining roads, it is not really a "tax" but a "user fee" that fishermen (and farmers) should not pay, since they traffic the waters (and farms), not the roads.

88. *See* OECD 1980 57 (Italy); *id.* at 64 (offering low-interest loans for fleet reductions in Japan).

89. *Id.* at 122-23.

90. However, environmental and resource advocates may argue for special green-light approval of subsidies that increase productivity or relieve catch pressure. *See infra* Part II.C.3. .

less plausibly “general infrastructure.” They might still escape characterization as “subsidies” nonetheless, on the grounds that they are outside “goods or services” as those terms should be understood in Article 1, or alternatively, that they are “non-specific” expenditures under the standards set forth in Article 2.<sup>91</sup>

Another shadowy but potentially significant area of subsidy involves governments’ increasing practice of purchasing access rights to a foreign Exclusive Economic Zone (EEZ) on behalf of their distant-water fleets. Recall that with the establishment of fishing zones, each coastal nation has the legal authority to bar access and grant conditional entry. The European Union (EU) pays approximately U.S. \$350 million annually to open developing countries’ waters to EU members’ fleets.<sup>92</sup> EU member countries co-finance most of these agreements.<sup>93</sup> Both payments certainly advantage EU fleets over competitors in product markets. Arguably, the EU payments and the individual nation’s co-financing are “subsidies” in the sense of “providing goods or services.”<sup>94</sup>

A government’s practice of rescuing failing fishing firms or “bailing out” vessels that have been seized for fishing infractions are other illustrations of possible “borderline” subsidization.<sup>95</sup> Such practices reduce the risks facing favored enterprises, and thus can convey potentially trade-distorting advantages. However, it is unclear whether the practice would qualify as a subsidy under SCM. Those nations

---

91. Only subsidies that are “specific” to an enterprise, industry, or group of industries trigger the various remedies of the SCM. SCM Art. 1.2, 2.

92. House of Lords, Select Committee on the European Communities, *Third Country Fisheries Agreements*, Session 1996-97 (3rd Report) at 5 (reporting that the EU spent more than 280 million ECU in 1996 for the rights to fish in non-EU waters other than by cash payment).

93. Milazzo, *supra* note 36, at 24.

94. Modes of compensating access other than by cash payment are harder, but not impossible, to fit into the mold of a legal subsidy. For example, some access is arranged on a *trade-for-access* basis in which a nation opens up its waters in return for preferential access for various of its own fish products. Milazzo estimates that the European Union (EU) funding alone for Third Party access agreements (including co-financing by members) probably amounts to at least \$500 million. *Id.* Since 1991, the U.S. has paid the Pacific island states \$14 million annually on behalf of U.S. tuna purse seiners. *Id.* at 47. Japan is spending about \$200 million on distant water access and foreign fisheries “assistance,” one objective of which is to assure continued fishing rights in developing nations waters. *Id.* at 45. From a trade perspective, all these payments are distorting. From a resource perspective, the payments are warranted only in the case that the fee paid covers the full cost of the harvest. Conversely, to the extent that the fee is less than the true resource cost, the payments not only distort trade, they are inefficient. Graciela Chichilnisky has forcefully demonstrated that free trade amplifies such inefficiencies that stem from inadequately defined property rights. See Chichilnisky, *Global Environment and North-South Trade*, 84 AM. ECON. REV. 851 (1994). Milazzo raises serious concerns about the environmental and developmental consequences of these arrangements with cash-strapped nations, such as Mauritania. Milazzo, *supra* note 36, at 42.

95. See *supra* note 45 and accompanying text.

that challenge such practices as a "subsidy" would characterize it as a "potential direct transfers of funds or liabilities."<sup>96</sup> However, SCM uses "loan guarantees" to illustrate a direct transfer.<sup>97</sup> That illustration suggests an intention to limit the provision to formal programs offering ex ante assistance, as distinct from soft assurances of ex post rescue. The WTO will have to interpret various similar measures on a case by case basis.

c. *"Implicit Subsidies"*

"Implicit subsidies" constitute a third category of problematic subsidization. This group includes benefits that a nation confers on its industry not by transferring value, but by declining to impose arguably socially justifiable costs. For example, a nation that countenances lax legal standards or fails to collect resource rents endows its firms with a competitive advantage. Whether these failures constitute "subsidies" under the trade laws is even more doubtful than in the case of "borderline" subsidies. Nonetheless, "implicit subsidies" raise issues too significant to ignore.

Consider first the issue of lax legal regimes. The argument has been made that where one nation's enforcement of environmental regulations falls below international standards or law, a nation that enforces the mandated standard, at higher cost to its industry should be allowed to impose a CVD on the imports of the lax state.<sup>98</sup> For example, the United Nations Convention on the Law of the Sea (UNCLOS) requires each nation to determine the allowable catch in its EEZ in a manner calculated to prevent "over-exploitation."<sup>99</sup> A fish importer might allege that the exporter advantaged its domestic fleet by disregarding its obligation under UNCLOS. Arguably, over-exploitation creates a trade advantage by lowering costs and gaining markets in the short-term. Even if an importer could prove such a case, however, and demonstrate that its own coastal harvests were in

---

96. SCM Art 1.1(a)(1)(i).

97. *Id.*

98. See Kenneth S. Komoroski, *The Failure of Governments to Regulate Industry: A Subsidy Under the GATT?* 10 HOUSTON JOURNAL OF INT'L LAW 189 (1988). As indicated in the text, no case decision has adopted this argument. Nonetheless, the author argues for keeping the possibility of a CVD open where a nation gains a competitive advantage by failure to live up to "minimum international environmental standards" that have been "affirmatively established" in international law, through conventions or "customary/normative principles." *Id.* at 209.

99. UNCLOS, Art. 61. At the present time, the language of many provisions in Multilateral Environmental Agreements (MEAs) touching living marine resources is probably too vague to determine that a member's lax actions constituted a violation. UNCLOS Article 118, addressing living resources of the high seas, such as tuna swimming beyond national EEZs, is representative in providing little more than that states should cooperate with each other.

compliance with UNCLOS and other relevant fisheries treaties, no trade law decisions have characterized as “subsidization” the cost advantages gained by noncompliance with international environmental standards.<sup>100</sup> Should the issue arise under the SCM, the most likely analysis would be that the benefits conferred by lax enforcement would not meet the “financial contributions” element of the SCM’s definitions of subsidy.<sup>101</sup>

The issue of whether lax law enforcement can be construed as implicit subsidy is therefore currently dormant. But the SCM makes the question worth revisiting. Under the pre-Uruguay Round law, the complainant’s *unilateral* initiation of CVDs was the predominant response to subsidies. This practice of unilateral response gave rise to the well founded concern that importers might use charges of lax enforcement as a disguise for illicitly motivated restrictions on trade.<sup>102</sup> It is significant that under the new SCM framework, and particularly in the context of the “serious prejudice” actions discussed in Part II.C.3. below, there is a larger role for *multilateral* dispute resolution. This greater opportunity for multilateral action means that the law can endorse a more robust definition of subsidy without running the risk of unilateral subterfuge.

We could simply require that all challenges based on implicit subsidies had to go directly to or through a WTO consultation or settlement panel process. The multilateral WTO procedures provide some assurance against the abuses of unilateral actions. At the least, the issue might be tabled for discussion before the Committee on Subsidies and Countervailing Measures (CSCM) or the Committee on Trade and the Environment (CTE).

The argument for challenging foregone resources rent as an implicit subsidy is also provocative. As suggested above in Part I.A.2.a., fishermen who withdraw resources from a common pool<sup>103</sup> should ideally pay a fee calculated to maximize the stock’s long-term economic rent. The knowledge of fisheries dynamics is too shallow (for

---

100. Rege, *supra* note 71, at 157.

101. *Id.* Rege notes that the current GATT definition of subsidy:

[M]akes it clear that, in order to constitute a subsidy, there should be a positive action by the government which directly or indirectly results in a financial contribution or benefits being conferred on recipients. The definition would not cover situations where it is alleged that the government has . . . failed to take action by adopting appropriate environmental standards.

*Id.*

102. For skepticism about use of CVDs to achieve harmonization and a “level playing field,” see Richard B. Dagan and Michael S. Knoll, *Duties to Offset Competitive Advantage*, 10 MARYLAND JOURNAL OF INT’L LAW AND TRADE 273, 285-87 (1986) (stating that costs and values of clean environment vary considerably from country to country, and domestic industries may manipulate environmental sympathies to achieve competitive advantage).

103. This rationale would not apply to aquaculturists, as long as the aquaculture is not imposing untaxed costs.

example, the “natural” fluctuation of stocks is unknown) to confidently reckon the correct charge. Nonetheless, several coastal nations confront fishers with a rough proxy of optimal rent in the form of a license fee or tradable catch quota. It is difficult to judge whether the charges are below the optimal level, such that they might constitute a subsidy. In the Uruguay Rounds, the United States suggested the simple test of whether the license (or other right) was disposed of at public auction.<sup>104</sup> The price of an auctioned license would provide the baseline for calculating an optimal rent. Presumably where the license was not subject to auction, one could construct the amount of the subsidy from the payments received by nations that did auction comparable access rights.

In a trade context, the challenger would be a nation whose fishers paid the presumptively correct resource rent. The object of the challenge would be fishers with whom that nation is in competition and who took the resource for “free” or at a discounted level.<sup>105</sup> The challenger would argue, based on economic theory and the practice of some nations, that the inadequate charge was a “revenue . . . otherwise due [but] foregone” under SCM Article 1.1(ii), or that the government, by not charging, thereby “provides goods or services” under Article 1.1(iii). In an analogous situation under domestic law, the U.S. successfully challenged Canada on its sales of softwood in the U.S., where the producers allegedly paid inadequate stumpage charges.<sup>106</sup> Whether a WTO Dispute Settlement Panel (DSP) would accept a similarly broad reading remains an open question. However, developing norms of international law provide growing support for the argument. For example, the United Nations Convention on Biological Diversity (CBD) provides that “Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound . . . incentives for the conservation and sustainable use of components of biological diversity.”<sup>107</sup> Failure to

---

104. The United States proposed that “governmental provision of extraction rights for natural resources, so long as the right to extract or exploit the natural resource is sold through an auction bidding process open to all parties” should not be actionable. The United States also proposed that the provision of processed natural resource products by a government should not be considered an actionable subsidy so long as the natural resource product is offered to all parties on the same terms and conditions. Patrick J. McDonough, *Subsidies and Countervailing Measures*, in 1 THE GATT URUGUAY ROUND: A NEGOTIATING HISTORY (1986-1992) 903 and n.547 (Terence P. Stewart ed., 1993).

105. Nation A’s failure to charge full resource costs to *its own fleet* provides a basis for alleging subsidization. There is less reason to suppose that A’s failure to tax full costs to B’s fleet provides a basis for an action.

106. Chapter 19 Canada-U.S. Binational Review Panel Report, In the Matter of Certain Softwood Lumber Products from Canada, USA-92-1904-01, 13 T.T.R. 161 (May 6, 1993).

107. Convention on Biological Diversity, June 5, 1992, art. 11, 31 I.L.M. 818 (1992).



charge the “true” resource rent, the argument would go, is a failure to adopt economically and socially sound policies. That argument would support an interpretation of noncollection as a “revenue due” and a subsidy.

## 2. *Prohibited Subsidies*

Thus far, this Article has only surveyed the different sorts of actions and inactions that might meet the SCM’s definition of subsidy under the SCM Part I. Not all subsidies are treated alike, however. Parts II, III and IV of the SCM make subsidies respectively “prohibited,” “actionable,” and “nonactionable.”

Subsidies are absolutely prohibited where they are contingent upon (a) export performance, or (b) the use of domestic over imported goods.<sup>108</sup> Such practices have certainly taken place in the fisheries context.<sup>109</sup> Whether they are currently widespread and significant remains to be, and should be, ascertained.<sup>110</sup>

## 3. *Actionable Subsidies*

Subsidies are actionable where one Member causes injury to the domestic industry of another Member, nullifies or impairs benefits to other Members, or causes serious prejudice to the interests of another Member. The “serious prejudice” provisions are the most intriguing, because they reach not only subsidies that displace or impede imports into the market of the subsidizing Member, but extend to subsidies that impede or displace exports into a third country market (6.3(b)), or lead to an increase in world market share in the subsidized product by the subsidizing Member (6.3(d)).

Serious prejudice may be found to exist where:

- (i) the total *ad valorem* subsidization of a product exceeds 5%;
- (ii) subsidies are paid to cover the operating losses sustained by an industry;
- (iii) subsidies other than one-time measures are paid to an enterprise to cover operating losses; and
- (iv) there is direct forgiveness of debt and/or grants to cover debt repayment. (Article 6.1)

If one of the above elements exists the burden of proof shifts onto the subsidizer. Following the shift, serious prejudice may be

---

108. SCM Art. 3.

109. For example, OECD 1980 at 91 identifies what would be suspect New Zealand loans and grants given to promote export of non-traditional species/products as well as incentive deductions for exports of certain species/fish products.

110. SOFIA 1995 at 262-6 (suggesting that low-income developing countries may have benefitted from targeted export subsidies for agricultural products; those countries may use similar methods to give their fishers an advantage in the fish trade).

found unless the subsidizing Member demonstrates that it caused none of the effects enumerated in 6.3, such as the displacement of another Member from the market of the subsidizing Member or a third country market.<sup>111</sup>

While no government currently provides a break-down of its financial support according to these categories, the literature includes numerous illustrations of fisheries assistance that could be pressed into each of the four "serious prejudice" categories. However, the first of the triggers is almost certainly the most potent. On the face of the still untested language, it would appear that if any Member's *total ad valorem* subsidization of a fish product exceeds 5%, serious prejudice "shall be deemed to exist." Once "deemed to exist," the subsidizing Member has the burden to show, that it did *not* impede any Member's exports into the subsidizing Member's market; did *not* displace another Member's sales from third country markets; and did *not* increase the subsidizer's world market share.

Because the 5% provision is entirely novel there is no case law to clarify it. Thus, many issues of scope must be resolved. Annex IV contains the methodology for calculating whether the 5% threshold has been breached. The methodology settles some questions,<sup>112</sup> while it raises others.<sup>113</sup> Notwithstanding the present ambiguities, the 5% clause is certain to be of great interest for those wishing to challenge fish sector subsidies.

The other "serious prejudice" clauses are also potentially far-reaching. Indeed, they are not subject to a 5% threshold. But they

---

111. SCM Art. 6.2.

112. In determining the 5%, the cost of support to the government, as distinct from benefits to the recipient, forms the numerator. The denominator focuses on the recipient's sales. See SCM Annex IV(2) (stating that "in determining whether the overall rate of subsidization exceeds 5% of the value of the product, the value of the product shall be calculated as the total value of the recipient firm's sales in the most recent twelve month period . . ."). SCM Annex IV(3) adds that "[w]here the subsidy is tied to the production or sale of a given product, the value of the product shall be calculated as the total value of the recipient firm's sales of that product . . .").

113. Among the questions raised are: firm definition; product definition; unallocated subsidies; and displacement controversies. *Id.* For instance, fishing cooperatives are intermediate units between government and firm in a number of countries, including Japan. Are they "firms" for purposes of Annex IV? Assume a firm of Member A receives only 3% Article 1 nonexempt subsidy, but its high seas tuna operations are subsidized 10%. If the firm is exporting tuna to Member B, does B have a serious prejudice complaint on the basis of tuna as the relevant product? Much of the support that could be regarded as trade distorting "subsidies" are not allocated to firms in the best kept government records. Consider the costs of maintaining fishing grounds. Will allocating these costs to an exporting firm be part of the complainant's *prima facie* case? Finally, it is not clear how to handle complaints where the crux of B's objection is that A's subsidies are displacing B's firms from potential markets in C or A. If A's firms sell their high seas catches to C, and those fleets are subsidized 3%, is it significant (and a violation) that A's firms selling to C (all sales to C included) are being subsidized 15% in toto?

similarly open important questions of scope. For instance, how does one demonstrate *industry operating losses* and *firm operating losses*? Many nations provide maritime insurance industry-wide; some governments pay firms directly for items such as fuel or exempt them from taxes. Do these payments fall within Article 6's "serious prejudice" category on the grounds that if the firms had to bear these costs, they, or the industry as a whole, would operate at a loss? Hopefully, the CSCM or CTE will provide further guidance. Otherwise, case law must clarify this area.

#### 4. *Non-Actionable Subsidies*

Considering how little has been done to confront fisheries subsidies, it may appear premature to raise the possibility that an assault on subsidies might go too far. But such a prospect springs from the potential tension between those who are motivated by traditional trade distortion grounds and those who are motivated by resource and environmental concerns. Presumably both camps are allied against benefits that promote artificially high catch levels, such as vessel construction loans and grants. But the environmental and resource camp will want to carve out as nonactionable a class of allegedly "good" subsidies, such as those aimed at enhancing stock productivity or at reducing catch pressure.

To illustrate this tension, imagine a government program that trimmed fleet sizes by purchasing "excess" vessels from owners, perhaps even sinking them where the wreckage would form an artificial fish-habitat. That program appears *prima facie* defensible from an environmental or resource point of view. If there are fewer vessels, there will be less catch and more fish. However, trade negotiators are apt to regard those, or any environmental and resource exceptions, warily. Arguably, a vessel repurchase or decommissioning program props up the value of a firm's outworn vessels. Such a program can provide a subterfuge for transferring wealth to the nation's fleet owners, thereby artificially lowering unit costs and potentially distorting trade. Hammering out which classes of subsidy should not be actionable (to "green light" in trade law parlance) is inescapably controversial.

The negotiators of the Agricultural Agreement attempted to mediate this tension by providing a narrow exemption to the commitment to reduce subsidies for those payments made "as part of a well-defined environmental or conservation program."<sup>114</sup> However, the exemption applies only so long as the program has "no, or at most

---

114. URAA Annex 2, 12(i) (specifying basis for exemption of payments under agricultural programs).

minimal, trade distorting effects.”<sup>115</sup> Even when a program meets that criterion, the exemption only applies to the payments for the extra costs or loss of income occasioned by complying with the government program.<sup>116</sup>

The SCM as it stands is not appreciably more expansive. “Green-lighted” subsidies are limited to certain payments for (1) research and development; (2) assistance to disadvantaged regions within the territory of a Member; and (3) assistance to promote adaptation of existing facilities to new environmental requirements imposed by law.<sup>117</sup> The parsimony of the SCM exemptions leaves in doubt, as a matter of trade law, the legal status of at least three major categories of “subsidies”: subsidies pursuant to international obligations, nonobligatory productivity-enhancing subsidies, and catch-reducing subsidies. The following section examines those categories in that sequence.

#### *a. Subsidies Pursuant to International Obligations*

Nations expend an increasing portion of their fisheries budgets on measures that might be construed as compelled by international law. Possible sources of obligation include regional seas agreements,<sup>118</sup> the Convention on Biological Diversity,<sup>119</sup> UNCLOS,<sup>120</sup> and agreements on wetlands,<sup>121</sup> endangered species,<sup>122</sup> and straddling stocks.<sup>123</sup> The tension between the WTO agreements and Multilateral Environmental Agreements (MEAs) exemplifies the conflict in this area. Imagine a country that heavily subsidizes the building of artificial reefs, the improvement and development of coastal fishing grounds, expenditures for marine pollution control and perhaps various services that protect spawning and nursery areas and inhibit bio-invasion.<sup>124</sup> One can also imagine a trade complaint portraying such benefits as the “provision of goods or services” that are “specific” benefits to the fishing industry and thus potentially actionable subsidies under the SCM.<sup>125</sup> In response to such a charge, the subsidizer might invoke

---

115. *Id.* Annex 2(1).

116. *Id.* Annex 2, 12(ii).

117. SCM Art 8.2.

118. *See, e.g.*, Convention for the Protection of the Mediterranean Sea Against Pollution, Feb. 16, 1976, 15 I.L.M. 290.

119. *See* 31 I.L.M. 818.

120. *See infra* note 98 and accompanying text.

121. *See, e.g.*, Convention on Wetlands of International Importance, Feb. 3, 1971, 11 I.L.M. 963.

122. *See, e.g.*, Convention on International Trade in Endangered Species of Wild Fauna and Flora Mar. 3, 1973, 12 I.L.M. 1085.

123. *See, e.g.*, *Straddling Fish Stocks*.

124. Fisheries Agency of Japan 1996 fiscal year budget includes about ¥32 billion for “Coastal Fishing Grounds Development” and ¥17.6 billion for “Shoreline Preservation.” Fisheries Agency of Japan, 1996 Budget, U.S. Dep’t of State Ref. No. 197465.

125. SCM Art.1(a)(1)(iii).

UNCLOS Art. 61, which obliges the coastal state to take measures “designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield. . . .”<sup>126</sup>

It is hard to believe that a nation that can portray its actions as honoring its obligations under UNCLOS should be vulnerable to trade charges under the SCM.<sup>127</sup> In fact, a nation so charged might claim that the SCM carried forward by implication the “general exceptions” defenses under GATT Article XX and that the measures mandated by UNCLOS were conclusively related “to the conservation of exhaustible natural resources.”<sup>128</sup> In this manner, the WTO might resolve some of the apparent tension between trade law and resource conventions within existing frameworks. On the other hand, the uncertainty and potential for conflict warrant placing this issue on the diplomatic agenda for further discussion.

*b. Nonobligatory Productivity-Enhancing Subsidies*

In other cases, a government will provide subsidy benefits under a productivity-enhancing program, but cannot plausibly characterize those benefits as *compelled* by an MEA or other international law obligations. For example, a nation’s program to construct fish-breeding reefs may go beyond what is understood as the true commitment of any relevant convention. Or there might be a convention that compels the action, but the nation undertaking the program is not a party to it (the U.S. is not a member of UNCLOS). Alternatively, the principle to which the nation points as justification, however admirable and broadly touted, may neither be formally embedded in any convention nor broadly enough accepted to be incorporated into customary international law (“soft”).<sup>129</sup>

---

126. UNCLOS, Art. 61(3).

127. Any such complaint would be brought by a nation alleging lost markets in a third country, and would most likely rely on “serious prejudice.” The complainant would be in the awkward position of tracing the competitive disadvantage its fishers suffered (fewer, more costly-to-catch fish) to its frugal failure to join the international convention the charged WTO Member is raising as a shield.

128. GATT Art XX(g) provides a defence to actions brought under the GATT “measures relating to the conservation of exhaustible natural resources.” Art XX(b) defends measures “necessary to protect . . . plant life or health.” Strictly speaking, these measures are not part of the SCM, which is a separate agreement; however, SCM Art. 32.1 enigmatically provides that “no specific action against a subsidy of another Member can be taken except in accordance with the GATT of 1994, as interpreted by this Agreement.” Whether an SCM subsidy has to meet GATT special defenses remains an open question.

129. International law accepts as “law” a body of general practices even if they are not embossed in treaty among the parties. That body of law is referred to as “customary law.” On that basis, some of UNCLOS’s provisions may bind nations not party to UNCLOS. See ALEXANDRE KISS AND DINAH SHELTON, *INTERNATIONAL ENVIRONMENTAL LAW* 105-06 (1991).

Those who support "green-lighting" cannot rest their case on the argument that the subsidies increase food supplies per se. If that were sufficient, nations providing free fertilizers and fuel to their farmers could make the same argument. A special distinction in favor of fish subsidies would have to rely on the fact that the productivity of capture fisheries cannot be enhanced without a provision of public goods. Public goods in this context would include provisions to monitor and police conservation and pollution regulations, as well as to provide harvest-enhancing services, such as the improvement of fishing grounds and construction of artificial reefs.<sup>130</sup>

On the other hand, even if the WTO acknowledges the legitimacy of a government providing these shared services, the "green-lighting" advocate must explain why the expenses should be borne by the public at large, through the tax base, rather than shouldered on the fishers through user charges (as is done to some extent by New Zealand).<sup>131</sup>

*c. Catch-Reducing Subsidies*

A final group of potentially controversial subsidies aims at a reduction in fishing. Examples include paying ship owners to decommission,<sup>132</sup> scrap,<sup>133</sup> or temporarily lay up<sup>134</sup> their vessels. Some nations compensate fishers whose vessels have been docked due to catch limitations, presumably mitigating the pressure to cheat.<sup>135</sup> Some of these measures may be defended by bringing them under the headings discussed above, that is, as implemented pursuant to international obligations, or as non-obligatory product-enhancing subsidies. For example, a nation whose catch-limiting subsidies were challenged might depict them as furthering MEAs. It may characterize other

---

130. There have been scattered experiments in privatization of reefs. See Jeffreys, *supra* note 17, at 319-21 (mentioning that some individuals and groups have treated reefs as private property, even in the absence of government recognition of a private property right).

131. McLeod, *supra* note 23, at 88, reports that New Zealand policy is to charge the industry directly where costs of providing service for industry can be identified. In 1995 the government anticipates recovering \$34 million as full cost recovery for fisheries management services, detection of offenses, research, etc. The New Zealand response appears to be correct. Why should a failure to mimic it not be considered a subsidy? One response might be that in this less than ideal world it is unrealistic to suppose that user charges will become universal; and that, considering the nature of the resource, the plight of world fisheries, and the exigencies of food supply, the trade laws ought not to inhibit fisheries managers from adopting the most promising tactics for stock enhancement, i.e., provide the good from the public purse, as a second best solution.

132. Holden, *supra* note 15, at 31, 33; OECD 1980 at 64, indicates compensation by Japan for "fleet reduction."

133. OECD 1980 at 57 (Italy).

134. *Id.* at 16 (Denmark).

135. *Id.* at 122-23 (Sweden).

subsidies as short-term efforts required for long-term productivity gains.

Nonetheless, subsidies that aim to decrease the pressure on stocks deserve distinct consideration. For one reason, when a nation provides support to limit the catch, the opportunities for trade-distortion are less apparent than when subsidization increases production. By reducing domestic supply, the nation's product prices should rise. This increases demand for other nations' products in its own market and, if the nation is an exporter, provides competitors an advantage in foreign markets. The basis on which another country would complain is uncertain.

A complainant would most likely argue that when elevated to a dependable national policy, the assurance of a vessel buy-back amounts to an *ex ante* risk-reducing (investment-inducing) benefit to the domestic fleet. The important policy question is whether the risks of abuse are significant enough to warrant a trade-law challenge to some catch-reducing programs that many fishery managers regard as vital. In the analogous situation in the farming sector, where a government pays farmers to withdraw land from production, the Agricultural Agreement exempts "resource retirement programs" that meet certain requirements.<sup>136</sup> This is not an easy issue and represents further warrant for a sectoral study.

### III

#### CONCLUSION

Global fisheries are ailing. There is no simple, and surely no single cure. For primary care we must look to fisheries management. But as long as investment in the harvesting sector remains excessive, the best-conceived management plans will be rejected, subverted, or ignored. Fishing capacity must be reduced.

One cannot address overcapacity without confronting subsidization. National legislatures have shown little inclination to tackle subsidies voluntarily and unilaterally. The disease feeds on itself: the more subsidies, the more capacity; the more capacity, the fewer fish per unit effort; the lower the fishers' returns, the more intense the pressure for government relief.

A proposal to treat this malady with trade remedies may sound quixotic. Even with the new SCM, no one expects nations to abandon sectoral subsidies easily. Trade negotiators are still fighting tariffs and non-tariff barriers (NTBs), more traditional and "easier" targets than fishing subsidies. Even when subsidies are called into question, those in fisheries have not excited much criticism until quite recently. Gov-

---

136. URAA Annex 2(10).

ernment assistance in many sectors, notably energy and agriculture, is probably comparable and sometimes worse.<sup>137</sup> Moreover, it is sobering to reflect upon the fact that the Agricultural Rounds, which refused to confront fish products, produced more text than commitment. Most of the support for applying trade-law disciplines to the fisheries trade comes from resource conservationists, not trade diplomats. Against this background, why should anyone hope to make more headway against fisheries subsidies?

Any progress will have to overcome strong resistance. Nonetheless, one should not dismiss the possibility of conscripting trade law into the fisheries campaign. Fish are one of the world's major traded products. They have become a major export for developing countries. Moreover, even if agricultural subsidies are as steep, the subsidization of fishing is potentially more pernicious than the subsidization of farm products. There are many arguments against farm subsidies, but long-term impairment, and the collapse of productivity are not usually among them. In addition, the potential alliance of powerful conservationist and environmental NGOs may make fishing subsidies more vulnerable than those in farming.

The question is not whether to amend trade laws to make fisheries subsidies challengeable. Many subsidies are in clear violation of the trade laws. In particular, the new SCM provides an untested, potentially far-reaching sword. A WTO Member that exports fish could trigger the "serious prejudice" provisions by showing that a subsidizing competitor impairs the challenger's access to the markets of the subsidizer or a third party. A test case would be welcome. Regardless of whether a Member brings such a suit, the proposals for a sectoral study of fisheries trade should go forward. Indeed, the CTE, CSD, FAO, and APEC all appear primed to examine subsidy-reduction and other capacity cutback measures.<sup>138</sup>

---

137. Worldwide, rice is subsidized 86%, wheat, 48%, beef 35%. See Shailagh Murray, *Subsidies Shackle EU Competitiveness*, WALL ST. J., Oct. 28, 1996, at A13. If one accepts Christy's estimates for fish, the worldwide level of subsidization was 77% in 1989. See *supra* Part I.B.1. This Article suggests that the estimate of a \$54 billion subsidy of a \$70 billion catch may be excessive. However, the catch of some species of fish must be subsidized at a level higher than the fisheries industry mean, perhaps at a level quite comparable to the levels of highly subsidized crops, and it is quite possible that the most highly subsidized fish catches are supported at a level comparable to the levels of highly subsidized crops.

138. The issues might even be appropriate for consideration by the Trade Policy Review Mechanism (TPRM) (Annex 3) which, while "not . . . intended to serve as a basis for the enforcement of specific obligations under the Agreement," TPRM A(1), may have broad, still-untapped powers to accommodate examination of trade-sustainability links. See International Institute for Sustainable Development, *The World Trade Organization and Sustainable Development: An Independent Assessment* 37-38 (1996).



The case for confronting fisheries subsidies is clear. We are over-harvesting the earth's living marine resources. Much of the problem arises from excessive subsidies, particularly those that exacerbate catch levels. The elimination or confinement of these subsidies would not, in themselves, heal the world's fisheries. But it would relieve national budgets of perverse expenditures, ease the task of fisheries managers, remove distortions to trade, help foster a larger, more valuable catch in the long-term, and protect the environment. It is time to act.

## IV

## APPENDIX:

## A BIOECONOMIC MODEL OF FISHERIES SUBSIDIES

This Appendix is intended to provide a relatively nontechnical version of the classic bioeconomic analysis of an open-access fishery.<sup>139</sup> The size of a fish stock is a function of natural and anthropogenic factors. Each year, a number of juvenile fish are recruited into the stock and a number die through natural causes including predation, disease, and age. A natural equilibrium population is reached when the stock (in weight) that is added by recruitment and growth is exactly offset by losses through mortality.

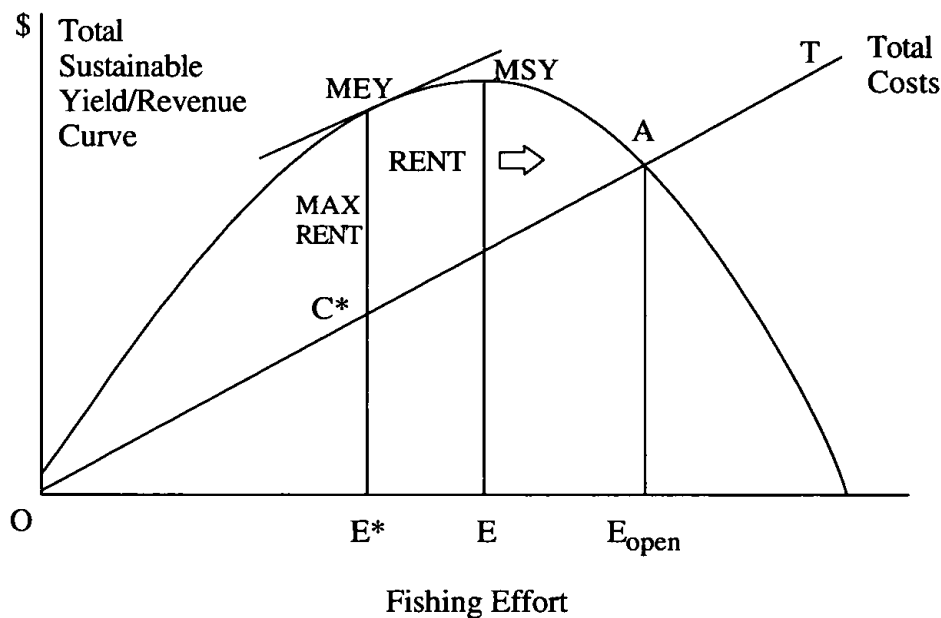


FIGURE A

By fishing, humans increase the natural rate of mortality as a function of fishing effort.<sup>140</sup> This creates new equilibria at levels where withdrawals through catch are exactly replaced by natural additions. The catch at each equilibrium is represented by the inverted sustainable yield curve in the figure above, each point corresponding to the potential catch, harvestable on a long term annual basis, for each level of effort. However, not all catches are of equal size. The peak, MSY, represents the maximum catch that can be harvested on a recurring basis. In the figure, the level of fishing effort  $E$  corresponds

139. This figure, one of a style common in fisheries analyses, is adapted from National Marine Fisheries Service, *ECONOMIC STATUS OF U.S. FISHERIES* (1996) at p. 6; the discussion of the basic model draws on that report and on LEE G. ANDERSON, *THE ECONOMICS OF FISHERIES MANAGEMENT* (Rev. 1986).

140. Effort is intended (not without conceptual and observational difficulties) to sum a basket of inputs that includes vessels, labor, gear, time spent fishing, and even skill.

to the MSY. Any effort in excess of  $E$  will lead over time to a catch lesser than MSY.

Economic analysis is superimposed upon the biological by accounting for the revenues and costs of fishing. Regarding revenues, price is here assumed to be invariant with output, so that the Sustained Yield Curve (in weight) can be identified with Total Sustainable Revenue (TSR)(in dollars)—the revenues that could be earned on a recurring basis at each level of fishing effort. The peak of TSR—maximum revenues—equals the peak sustainable yield, MSY.

Costs are displayed in the form of a Total Costs Curve (TC).<sup>141</sup> MEY (for Maximum Efficient Yield) is the point on the TSR most in excess of TC. It is at MEY that the slopes of the TC and TSR curves are equal, signifying equality of marginal costs and benefits.<sup>142</sup> It is therefore the point of maximum rent; that is, the point at which the return to the resource is most in excess of normal profits. With some simplification,  $E^*$  can be identified as the social optimal: the point of effort beyond which social benefits decline faster than social costs. Any effort in excess of  $E^*$  is inefficient: resources put into the capturing fish at margins beyond this would yield greater benefit if diverted out of the fishery into other sectors.<sup>143</sup>

The dilemma in capture fisheries management stems from the fact that, as long as there are no barriers to entry, and fish are unowned until captured, effort will exceed  $E^*$ . This follows from the fact that in the competition to catch fish, each would-be harvester internalizes only his “private” costs of establishing ownership, such as incremental fuel and labor. There are other costs that are largely externalized. First, as the stock dwindles, the costs of capturing the marginal unit rises: the quarry being less dense, there is more water to filter or area to travel for each ton of catch. Second, congestion costs increase with effort. And third, because the fish are unowned until capture, each fisher externalizes all but a fraction of the asset-deplet-

---

141. In this model TC does not capture some social, including environmental costs, such as the existence value of noncommercial species, and the option value of biodiversity portfolios. If accounted for, these would raise the cost curve and move  $E^*$  to the left.

142. See note 143.

143. As my colleague Eric Talley points out, the identification of marginal revenue and costs with *social* benefits and *social* costs is linked to the simplifying but improbable condition that price is independent of output, which eliminates considerations of consumer surplus that would flow from a larger catch at a reduced price. While the identification of  $E^*$  with the social ideal may be inexact, it is safe to assume that the true social ideal, with the condition of price independence relaxed, is less than  $E$  (in other words, the level sanctioned by economic theory is less than that sanctioned by biology), but not to the right of MSY. For a much more complex and technical analysis where prices are variant, and Anderson, *supra* note 139 at 74-83.

ing cost his haul exacts from the fishery.<sup>144</sup> Cooperation among the fishers would retard the increased effort: as a group, they have a mutual interest in restraint. But each fisherman is a potential free-rider on the restraint of the others. With large numbers (assured by the open entry condition) cooperation is unachievable. As a consequence, fishing effort expands until the least efficient fishers are earning revenues just equal to their private opportunity costs (which equates with the level at which resource rents are thoroughly dissipated).<sup>145</sup> A is the point of equilibrium at which total revenue and total costs meet. Fishing effort persists to  $E_{open}$ , even though A represents both less revenue and higher costs than the effort at both EY and MSY.<sup>146</sup>

Several policy instruments have been developed to counteract this tendency towards excessive fishing. The manager can address *technical input* variables, for example, mandating larger mesh size so as to provide juveniles a longer time to grow. Access to the fish can be restricted, by locale or by season. Attempts can be made to limit *output*, from per vessel quotas to declaration of a Total Allowable Catch (TAC). The firms' cost functions can be addressed directly through *taxes* calculated to drive the level of effort back to  $E^*$ .<sup>147</sup> And there has been experience with the establishment of *property rights* in the stock.<sup>148</sup> Essentially, ownership shares (labeled ITQs for Individual Tradable Quotas) are created in the TAC and allocated. Each share represents a market-transferable entitlement to a specified percentage of the TAC, backed by the power of government to exclude interlopers. The fact that each fisherman's catch is restricted bars the expansion of effort to the point where private marginal costs equal marginal revenues. Emphasis is shifted from maximization of revenue to the reduction of costs for a harvest equivalent to the TAC. Opportunities for cost reduction arise because a group of fishermen can combine effort to reach their joint ITQ ceilings at a lower aggregate cost than if

---

144. Roughly, if there are 100 fishers in the fleet, and the removal of a marginal fish costs \$1 in terms of reduced asset value (which can be thought of as increased costs of fishing for the remaining fish, increased probability of "crash" of the resource, etc.) the successful fisher, who realizes the full market costs of the fish, bears (in excess of his internalized incremental costs) only a contingent 1/100 share of the cost of its removal; the asset value decreased by \$1, but it "costs" the catcher only his expected 1 cent.

145. See Terry Heaps and John F. Helliwell, *The Taxation of Natural Resources* in 1 ALAN J. AUERBACH AND MARTIN FELDSTEIN, HANDBOOK OF PUBLIC ECONOMICS at 430 (1985).

146. Anderson observes more comprehensively that "A biological and economic equilibrium occurs if, at the existing level of effort, catch equals growth so the population will not change and at the same time revenue equals costs so the amount of effort will not change. If either of these conditions does not hold, then the population size or the level of effort will change." *Supra* note 139 at 31.

147. See Anderson, *supra* note 139 at 219-31.

148. More precisely, in the flow from the stock.

they fished competitively. The cost-reducing combination can be achieved either through cooperation of rights-holders or, via transfers, concentrating ITQs in a reduced number of efficient fishers, e.g. owners of high-cost vessels selling their rights to owners of low-cost vessels. Moreover, each fisherman holding such an investment has stronger incentive to internalize the long-term consequences of his activities than he does under conditions of free access. Any depletion of the asset works not merely to his contingent and fractional disadvantage (as one of many competing fishermen with a hope of capturing stock in future seasons) but more directly erodes his investment in his own "property," his tradable share. Cooperation with managers is, if not assured, fostered.

There is a sizable body of literature analyzing and comparing each of these approaches, and recording the difficulties of implementation. Here, it is only to be observed that whatever flaws may be identified in each strategy (the "effectiveness" of many depend upon their raising the unit costs of fishing, often perversely)<sup>149</sup> they each, separately or in combination, at least aim in the correct direction, viz, to reduce the level of catch from  $E_{\text{open}}$  back towards  $E^*$ .<sup>150</sup> The same cannot be said of all subsidies, however.

#### A. *Cost-Reducing Subsidies*

Through subsidies, the government intervenes in this dynamic in one of three ways. The first and dominant subsidy strategy is to defray the costs of fishing inputs. Examples range from government funding for vessel construction to the purchase of foreign water "access fees" and provision of casualty and unemployment insurance. The slope and shape of the cost curve of an industry subject to cost-reducing subsidies will vary with the particular policy. But Figure B illustrates the effects with the line  $S_1$ , which represents costs to the industry net of subsidies received.

Costs borne by fishers decline, and thus the level of effort expands to  $E_{\text{sub1}}$ . The value of the stock is further reduced. And with sparser stocks, the costs per unit caught rise.<sup>151</sup>

Worse, the "relief" the subsidies provide industry and labor may prove only temporary and self-defeating. Once the newly created (subsidized) "rents" are in place, and efforts have expanded to the

---

149. For example, seasonal and per-vessel quota, by artificially restricting return on investment, are facially inefficient. A justification might be advanced for such measures, however, when imposed for a short-term only, as a means of achieving equitable distribution in response to a sharp but temporary decline in stock abundance.

150. ITQs also induce concentration of effort in vessels with the lowest long-term average costs.

151. And government expenditures increase by the amount of the subsidy.

subsidized level,  $E_{\text{sub1}}$ , there is more aggregate investment in fishing, but the returns are no better than before. This produces political pressure for the government to institute a new round of subsidies, moving the costs net-of-subsidies curve to  $S_2$ . If the lobbying prevails, effort extends, even less efficiently, to  $E_{\text{sub2}}$ . The cost of subsidy to the government rises to  $T - E_{\text{sub2}}$ . And industry entreaties for further rounds of "relief" are not quelled.

### *B. Stock-Enhancement Subsidies*

Rather than try to lower the cost of effort, other subsidies aim to expand the stock—for example, the improvement of grounds and building of artificial shoals at public expense. The effect of these subsidies is to move MEY, MSY, etc. to the right, as indicated in Figure C. The fishery is more robust, enabling a larger MSY. If entry is unrestrained and other management devices ineffective, the yield moves to the new points of rent dissipation and effort,  $A_s$  and  $E_{\text{open:sub}}$ , respectively.

### *C. Effort-Constraining Subsidies*

A third group of subsidies compensate fishers for reduction of effort. Such subsidies include compensation to fishers to keep vessels in port and the repurchase of "excess" vessels.<sup>152</sup> The immediate effect, (Figure D) is to reduce effort  $E_{\text{open}}$  to a new  $E_{\text{sub}}$ . But this is not an economic equilibrium. Unless measures are taken to eliminate a rebound in other inputs (entry of new vessels, employment of more efficient gear, etc.) the level of harvest can be expected to return to the rent-dissipating point A, associated with  $E_{\text{open}}$ .

---

152. As noted in the text, some such government programs, if adopted as a reliable government commitment, might be construed as cost-reduction subsidies.

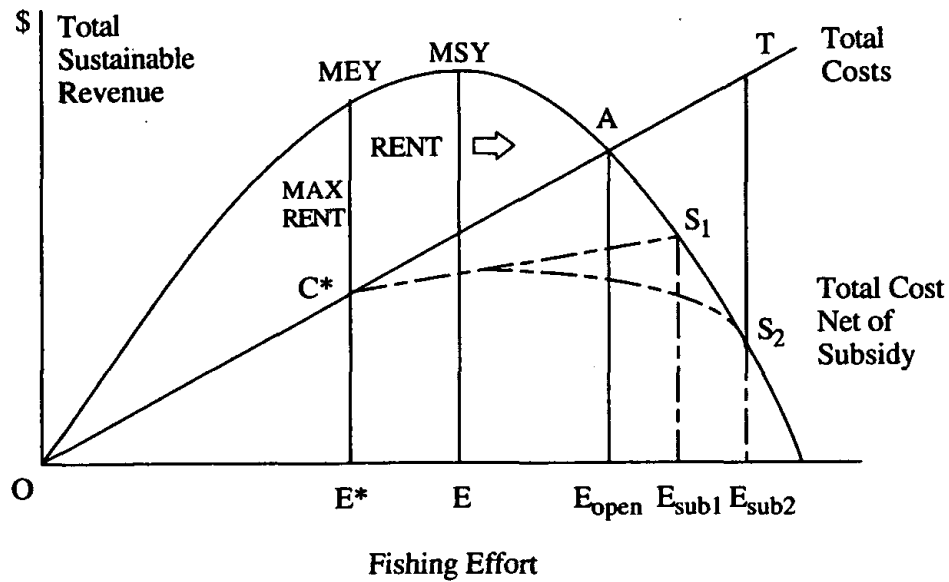


FIGURE B

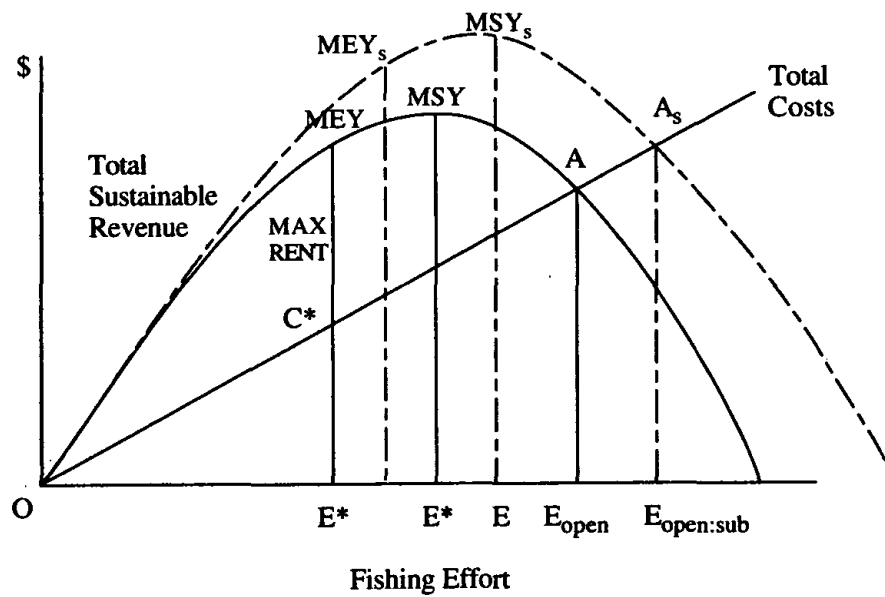


FIGURE C

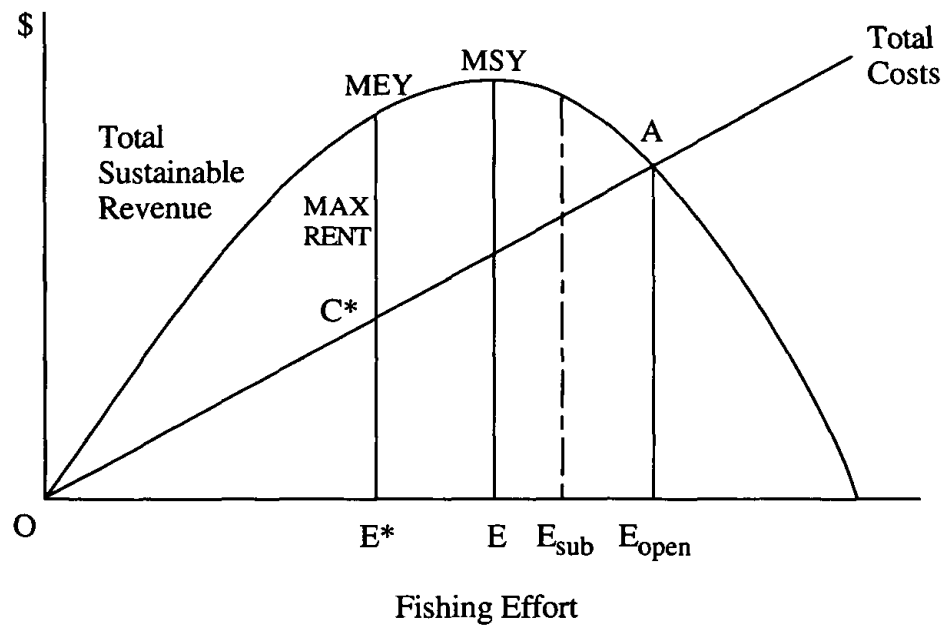


FIGURE D