

When Bad Gets Worse: Corruption and Fisheries

Ussif Rashid Sumaila and Jennifer Jacquet

Sea Around Us Project and Fisheries Economics Research Unit
Fisheries Centre, University of British Columbia
Vancouver, BC V6T 1Z4

1. What is Corruption and Why Bother with It?

In a nutshell, dealing with corruption is about how to get people to do what they are legally supposed to do. Most people think of corruption as the use of public office for private gain (Shleifer & Vishny 1993). This can be split into bureaucratic corruption and political corruption. It should be noted however that this distinction is very blurred. Bureaucrat corruption is opportunistic (rent-seeking) behavior whereby civil servants attempt to increase their level of compensation by lobbying lawmakers and politicians and by engaging in other activities to influence the political system and maximize benefits accruing to them.

Many civil servants also illegally increase their compensation by providing services to interest groups that seek favors from the government. The problem here is that if bureaucrats discover that they can earn more income from providing services to groups seeking state favors than from their regular jobs, they are likely to pay more attention to the demands of such interest groups than to the proper enforcement of state laws and regulations and the effective implementation of national development plans. When government officials misuse their governmental powers for illegitimate private gain we have political corruption.

Weak governments that do not control their agencies often experience high levels of corruption (Shleifer & Vishny 1993). But corruption extends beyond the governmental sector and a recent definition of corruption includes the abuse of private office for private gain under lax regulation by the relevant public authorities (Bardhan 2005). This is becoming more and more common, especially in developed countries (recall: the Enron debacle).

Corruption can alter the utilization and fair distribution of any good, but corruption is particularly prevalent when dealing with open-access resources. For our purposes, the definition by Robbins (2000 p. 425) is most appropriate: “corruption in natural resource management is defined as the use or overuse of community natural resources with the consent of a state agent by those not legally entitled to it.” Thus, at every link in the natural resources supply chain, the potential for corruption exists.

Until only recently, corruption was widely accepted as a means to overcome bureaucratic hurdles to economic growth. In the 1990s, the collective attitude toward corruption drastically changed and corruption is now viewed not only as unethical and an economic hindrance, but as something that can be controlled (Eigen & Eigen-Zucchi 2003).

Corruption can lead to failures in the achievement of management goals and so it is therefore important to identify where it exists and how it might be eliminated. Here we explore corruption at different stages of fisheries management, illustrated with case studies, and compile several suggestions on how to mitigate fisheries corruption.

2. Corruption and fisheries

There are ample opportunities for corrupt practices to take place in fisheries. Corruption begins in institutions and eventually trickles down to the water. Corruption on the water is rampant in part due to the vastness and visual impermeability of the medium. It is difficult for enforcement efforts to locate fisheries corruption in the far reaches of the five oceans. But corruption in fisheries, just as in any other commodity, can occur through the entire chain of custody and this chapter explores corruption at each of these stages from the time a fish or invertebrate is taken from the water to the time it reaches a mouth.

Corruption occurs at the international level through bribery; the negotiation of access agreements between rich and poor countries, and by countries failing to meet their obligations under international agreements. Similarly, corruption occurs at the national and regional levels of fisheries management usually through statistical malpractices and officials accepting bribes. Processors, distributors and retailers are known to engage in corrupt practices through corrupt labor practices; and the renaming and mislabeling of fish and fish products in order to beat the law. Finally, fishers themselves engage in corrupt practices by fishing in excess of quotas due to (i) illegal, unreported and unregulated (IUU) fishing; (ii) discards; (iii) high grading; (iv) smuggling; (v) transshipments; (vi) mislabeling; (vii) piracy; and (viii) harass observers.

Internationally, the importance of non-compliance in fisheries was highlighted in 2001 with the endorsement of the International Plan of Action (IPOA) to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated (IUU) Fishing. Illegal fishing is widespread globally as depicted in Figure 1a below. Globally, IUU catches were an estimated 16 million tonnes in 2002 (roughly 20% of global catch) valued between US\$2.4 and \$9.5 billion (MRAG 2005). IUU fishing can lead to the collapse of fishery or impede efforts to rebuild depleted stocks (FAO 2001). Other types of corruption beyond exceeding quotas also exist in fisheries. Institutions facilitate illegal fishing, which undermines the management of the resource.

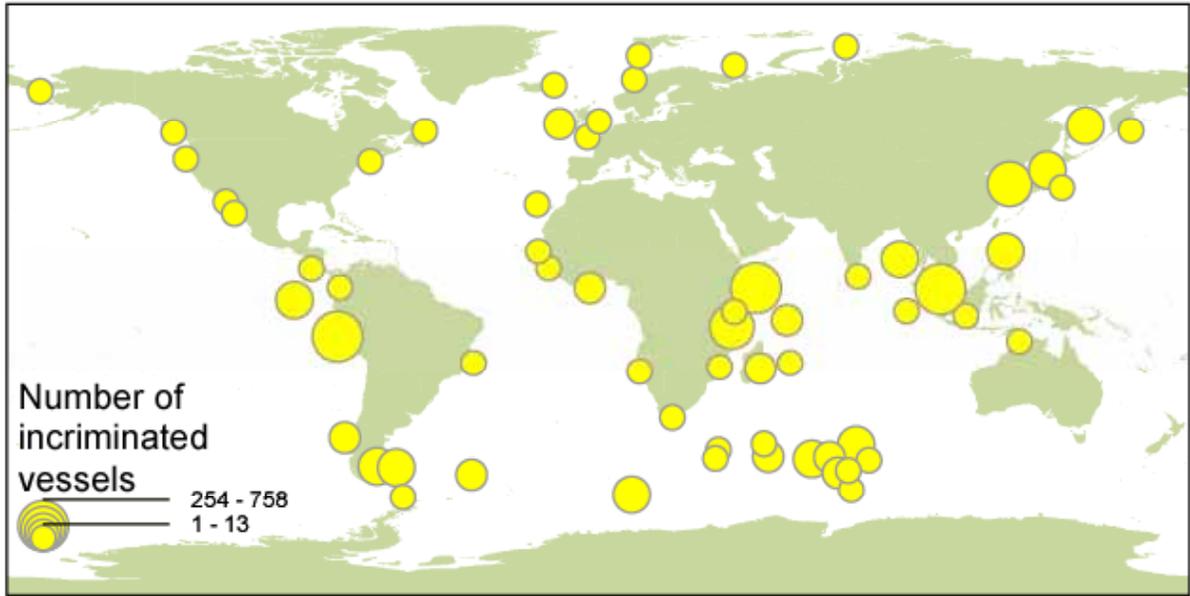


Figure 1a: A map of global illegal fishing incidence (Sumaila et al., 2006).

2.1 In the Global Arena: Institutional Corruption at the International Level

Corruption in fisheries can be a particular challenge at the international level, where the likelihood of misallocation of resources is much greater than the national level. One widely published case of corruption at the international level involved the International Whaling Commission (IWC), which was established to sustainably manage and conserve whales. In 2001, Japan admitted to bribing poor nations to support its pro-whaling stance at the IWC (Joyce 2001). The previous year, Dominica’s environment minister resigned in protest because six Caribbean nations voted with Japan on almost every issue, including blocking a proposed whale sanctuary in the South Pacific (Joyce 2001). More recently, the fisheries chief in the Solomon Islands accused Japan of bribes in the form of large aid packages in exchange for support at the IWC and cheap access to tuna fisheries (ABC 2005).

Access agreements between fishing nations can also be corrupt (Ilnyckyj 2007). The negotiation of access agreements is almost never transparent. The secrecy leads to unfair distribution of fisheries resources. The Department of Fisheries in the EU oversees access agreements between EU nations and other regions of the world. One of their roles is in exporting overcapacity from the North to the South, which not only threatens food security, but also undermines developing world economies due to the fact that payments to access foreign waters greatly undervalue the resource. This is particularly true in West Africa (Kaczynski & Fluharty 2002). EU fleets fishing for tuna in West African waters will not accept West African observers onboard, do not visit local ports, and do not accept local crew members (Kaczynski & Fluharty 2002). Even though access agreements between other developed countries (e.g., the U.S.) and other developing

countries (e.g., the Pacific Island States) in not much in the news in the regard, these are most likely not corrupt-free agreements.

2.2 In the capitol: institutional corruption in domestic fisheries

Though the impacts of corruption occur most directly on the water, weak or corrupt international or national institutions often facilitate it. “Governmental corruption in natural resource management, where the state may be perceived as gatekeeper of such resources not so much for the public good but for selfish interests of a few, further erodes local incentives for resource stewardship” (Young 2001 p. 300).

Shortfalls in governance over public goods at the national level can also affect national goals to relieve poverty and achieve national economic growth (Milledge et al. 2007). Often, fisheries legislation is adequate or even good but not enforced (Atta-Mills et al. 2004). Ghana, for instance, requires foreign companies operating in its waters to sell their catch in Ghana. However, it does not enforce this (Atta-Mills et al. 2004).

Enforcement might also be undermined by corruption in higher political ranks. In 2001, for instance, the Galapagos National Park caught the *San Mateo*, an Ecuadorian long-liner suspected of illegally fishing for sharks within the Galapagos Marine Reserve. The *San Mateo* captain’s lawyer happened to be having lunch with Admiral Vega, the high admiral of the Ecuadorian Merchant Marines, at the time of capture. Admiral Vega then ordered the Ecuadorian Navy officers from the Galapagos to release the vessel from custody and inspection. Corruption within the Ecuadorian Naval Command undermines the laws that govern the Galapagos Marine Reserve, a World Heritage Site.

Fisheries corruption at the national level also manifests itself in Flags of Convenience (FOCs), which allow operators to avoid restrictions in their own countries. More than 1200 industrial fishing vessels fly flags of convenience and more than 1400 large-scale fishing vessels operate under unknown flags. According to the International Transport Workers’ Federation, Liberia supports the greatest number of foreign vessels with their flag. Even the world’s largest landlocked country, Mongolia, now provides their flag for hundreds of ships at sea (Brooke 2004).

FOCs provide cover for all sorts of illegal activity, including drug and missile trafficking to illegal fishing (Bradsher 2006). Fishing boats with FOCs avoid taxes, pay low wages, and follow bad labor practices, ranging from poor living conditions to abandoning sailors in distant ports when it is no longer cost effective to fish (Working 1999). ICCAT estimates 10% of tuna is caught illegally by vessels flying flags of convenience. Vessels flying FOCs land their catches in national ports with relaxed import regulations (Gianni & Simpson 2005).

Bribery is another form of prevalent corruption at the national level. In one South African case, 18 fishery officers were convicted due to a paper trail that uncovered bribes (Hauck & Kruse 2006). But most bribery cannot be traced and when it is uncovered it is often unpunished. A Korean captain in South African waters was caught trying to buy off an

observer (after the observer had taped illegal fishing activity, including shark finning) and then threatening him. The national judicial system then released the captain with a light fine¹.

Corruption can also occur in national statistics. A case of fisheries statistical malpractice was uncovered when Watson and Pauly's (2001) predictive fisheries models could not explain reported catch trends of several countries, including China. Corrections for the Chinese fisheries data showed that world fish catches were not increasing but, in fact, declining (Watson & Pauly 2001). In addition, despite growing concern for global shark populations, China has allowed frozen shark fins to be reported as shark meat since 2001. Since then, shark fin imports have fallen by half though demand for shark fin soup continues to grow (Raloff 2006).

2.3 Corruption in fish processing and distribution

Middlemen in fisheries processing are also guilty of corruption, particularly in regards to working conditions. Shrimp processors, perhaps in part due to the scale of industry, are among the most notorious for sub-standard labor conditions, ranging from illegally low wages and long hours to physical violence and sexual assault, to which national governments appear to be privy (EJF 2003). Labor abuses are widespread throughout the Thai fishing and seafood processing sectors. Child labor, excessive work hours, and forced labor are the norm in Thai seafood processing plants.²

Shrimp is particularly notorious. It is likely that more children work in the shrimp industry than any other (Delap & Lugg 1999). According to one fisherman in the Philippines³, "The shrimp live better than we do. They have electricity, but we don't. They have clean water, but we don't. The shrimp have lots of food, but we are hungry." Workers and protesters have been murdered in shrimp industry-related violence in at least eleven tropical countries⁴. In Bangladesh specifically, more than 150 people have been killed in shrimp-related disputes since the 1980s (EJF 2003).

The corrupt practice of mislabeling and renaming of seafood, particularly by distributors and final seafood retailers, is also rampant (for an overview see Jacquet and Pauly, in press). One-third of all seafood in the U.S. is mislabeled as another species (Tennyson et al. 1997). After a campaign in Europe to raise awareness about the negative effects of farm-raised shrimp, Thai shrimp processors began exporting farm-raised shrimp as 'wild'. After EU tariffs were put on Thai shrimp, producers sent Thai shrimp to Malaysia for processing where it became a Malaysian product (Miller 1999).

¹ <http://www.panda.org.za/article.php?id=391>.

² "The Mekong Challenge: Underpaid, Overworked and Overlooked, the realities of young migrant workers in Thailand (Volume 1)," Mekong Sub-regional Project to Combat Trafficking in Children and Women, Bangkok, International Labour Office, 2006.

³ Cited in (EJF 2003).

⁴ Honduras, Ecuador, Brazil, India, Bangladesh, Thailand, Vietnam, Indonesia, and the Philippines.

Middlemen also mislabel their fish as sustainably caught. A grocery store in Seattle, Washington was caught mislabeling between 4 and 5 percent of its fish with “EcoFish” labels, which indicate the seafood had been harvested in environmentally responsible manner (Denn 2003). Corruption in terms of traceability subverts market-based sustainable seafood campaigns, contributes to the further degradation of fisheries resources, and can even have adverse affects on human health (Jacquet & Pauly 2008).

2.4 On the water: corruption and fishers

The corruption with the highest impacts on fisheries resources often occurs on the water (though corruption at institutional levels might have facilitated it). Fishers exceed quotas, discard untold quantities of fish, ‘high grade’, mislabel their catch, and transship it at sea. They have also been caught harassing observers onboard to prevent the aforementioned offences. Fishers choose to comply with regulations mostly based on monetary incentives (Hatcher et al. 2000).

In 1999, an estimated 80 percent of Patagonian toothfish sold were illegally caught. There were an estimated 90 vessels implicated in this unregulated fishery (Agnew 2000). Economic gains and low risks of being caught motivate fishers to fish illegally. At \$24/kg the economic incentives favored fishing for toothfish, regardless of the chance of being caught (which, as it turns out, is incredibly small). A review of IUU cases from 1979-1993 assumed patrol coverage of the high seas of 5% (Sumaila et al. 2006), which is judged to be much higher than the patrol coverage in the real world. And yet, when the Uruguayan flagged *Viarsa* was suspected of illegally fishing for Patagonian toothfish in Australian waters in 2003, Uruguayan government officials came to its assistance (Knecht 2006).

High grading and/or discarding untold quantities of fish are other types of corruption that frequently occur at the fisher level. These activities ensure the selection of only the best fish for use in meeting an official quota. Nearly one-quarter of all fish caught by U.S. fisheries are discarded, fish protein wasted at sea (Harrington et al. 2005). Fishers also frequently catch juvenile fish and, rather than release them, use them as bait. This happened in the 1980s, when fishers in Florida illegally cut up undersized Red grouper, which they called ‘maggots’ and used them for bait (Nohlgren & Tomalin 2006).

Smuggling is another problem common among fishers. The notorious fisherman Arnold Bengis was caught smuggling 2 tonnes of illegally caught Patagonian toothfish into the U.S. beneath a thin layer of crayfish (NET 2004). In South Africa, he was found guilty of illegal harvesting of rock lobster and other fish, such as Patagonian toothfish, from 1987-2001. His company had also bribed 18 South African fisheries officers (Hauck & Kruse 2006).

Renaming and mislabeling also occurs at the fisher level. When English fishers exceed their cod quota, they label their cod as ‘ling’ to pass it through customs (Clover 2006).

Observers that monitor fishing practices and catch limits are one tool of combating corruption on fisheries vessels. But observers might also be victimized by corruption. Figure 1 presents the attacks against U.S. fisheries observers, which have been on the rise since the early 1990s (PEER 2007) The sharp decline in reported attacks in 2006 is because the National Oceanic and Atmospheric Association (NOAA) ceased collecting data. “As our oceans continue to be overfished, the importance of supporting the corps of professional observers only grows more acute. Yet, NOAA appears to be in retreat,” commented Jeff Ruch, the Executive Director of the group Public Employees for Environmental Responsibility (PEER). The lack of government action on this issue hints at corruption.

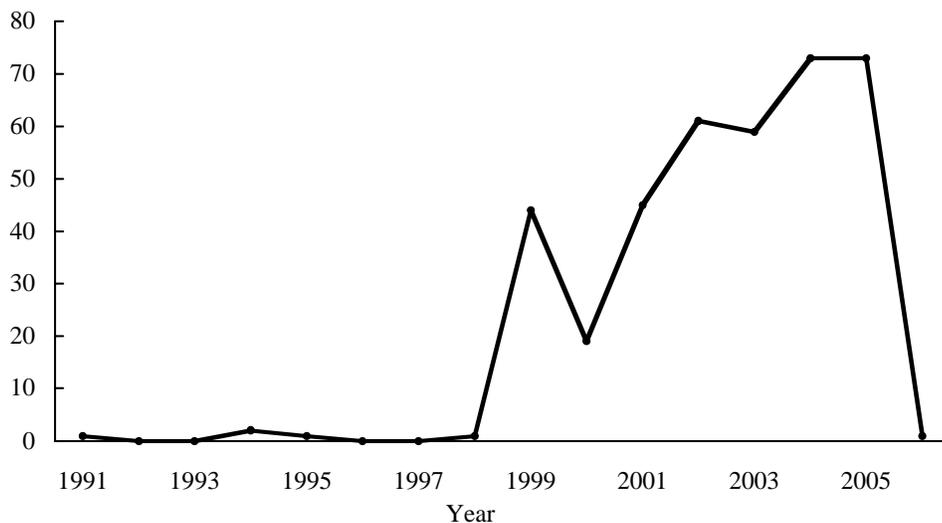


Figure 1: Reported Attacks against U.S. Government Fisheries Observers, 1991-2006

2.5 Is corruption getting worse?

In some sense, the biggest improvements in corruption has been the recognition that corruption does not improve economic efficiency, as many believe prior to the 1990s, but undermines democratic decisions to protect human rights, resources, and wildlife (Eigen & Eigen-Zucchi 2003). But in the case of fisheries, one might argue that corruption has worsened as wild-caught fish have become scarcer and trade in fish and fisheries products has increased. “With resources becoming scarcer and access to them becoming more valuable, incentives for corrupt practices are bound to increase” (FAO 2006 p. 17).

Wild-caught fisheries peaked in the late 1980s (Watson & Pauly 2001) but demand for seafood continues to grow. Worldwide, per capita consumption of marine fishes has nearly doubled since the 1960s (WHO 2006) while the human population has also doubled over this same time period. Seafood demand is rapidly outpacing the supplies available from capture fisheries (Worm et al. 2006). Corruption subverts what are

relatively new management regimes to deal with the problem of overfishing. By trying to compensate for the shortage, corruption actually exacerbates it.

There are several indications corruption in fisheries is on the rise. The number of fishing vessels flying flags of convenience, for instance, has increased drastically from the early 1990s (Gianni & Simpson 2005). The increase in the number of attacks on U.S. fisheries observers (Figure 1), while perhaps a partial result of a greater number of observers, is also an indicator of increased corruption.

Lax seafood testing assists corruption in traceability. While the European Union tests 20-50% of its seafood in any given year, the U.S. is much more relaxed. In 2006, the U.S. Food and Drug Administration (FDA) tested only 0.59% of seafood imports (Food and Water Watch 2007).

2.6 Effects of corruption on fisheries science, management and resource sustainability

The ultimate effect of corruption in fisheries is to lead to (i) scientific failure; (ii) management failure and (iii) implementation failure. The consequence of which is overfishing and depletion of fisheries resources, which in turn negatively affect fishing communities economically, socially, culturally, with time. Corruption leads to scientific failure because it messes up the science of fisheries. It results in, for example, inaccurate stock assessments because it makes it impossible for stock assessment scientists to know how much fish is actually removed from the oceans, a piece of information, which is crucial for successful stock assessments. Corruption in fisheries results in management and implementation failures, in that, it makes it more likely that fisheries managers will approve total allowable catches that are higher than those recommended by scientists (that is, management failure), and makes it attractive for monitors of fish catch to deliberately allow fishers to catch more than their approved quotas (that is, implementation failure). Figure 2 give our current guesstimate of the level of illegal, unreported and unregulated (IUU) fishing and discards globally, indicating that it constitutes significant fractions of reported global fish catch.

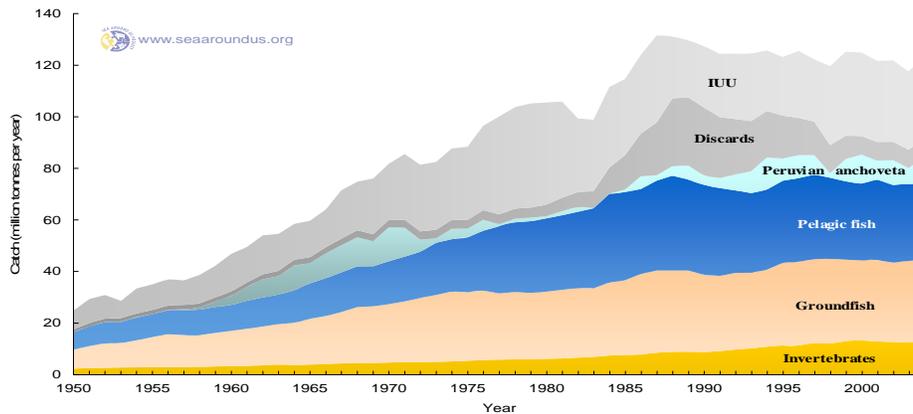


Figure 2: Guesstimate of the level of illegal, unreported and unregulated (IUU) fishing and discards globally.

3. Combating Fisheries Corruption

The instinctual reaction to fisheries corruption is to prescribe better enforcement, including high levels of observer coverage. But enforcement is costly and, in natural resource management, often accounts for 25-50% of public expenditures (Supine & Kieran 1999). It is also not necessarily the best solution for weak governments or for fishing fleets known to harass observers. Instead, it might be worth investing more in existing enforcement structures.

In societies where civil service compensation levels are relatively low, a significant part of the public employee's total compensation may be derived from engagement in outside activities, resulting in a significant increase in bureaucratic corruption (Baku 1991). An increase in wages for fisheries officers might be a preferred solution to hiring more.

In 1999, South Africa improved its efforts at fisheries compliance through a variety of measures such as increasing the number of field stations and fishery control offices along the coast, improving salaries for fishery control officers, and creating a 24-hour hotline for anonymous tip-offs (Hauck & Kruse 2006). They also ramped up their MCS, not to be confused with the MSC. MCS--Monitoring, control, and surveillance systems--have been proposed in many regions, particularly in Africa. But MCS cannot overcome corrupt officials (Atta-Mills et al. 2004) or unfair access agreements (Kaczynski & Fluharty 2002).

Similarly, vessel monitoring systems (VMS) are theoretically good and are required in some fishing areas. But the VMS onboard the *Viarsa*, a Uruguayan flagged boat suspected of illegally fishing in Australian waters near Heard Island, showed that the *Viarsa* was supposedly 3000 nautical miles from where it was spotted (Knecht 2006).

We know that high fines deter illegal fishing (Agnew 2000), though we know that moral obligations and social influence also deters illegal behavior (Supine & Kieran 1999) Still, fines are too low as is the risk of getting caught (Sumaila et al. 2006). In a case of two poachers indicted for illegally harvesting American sturgeon caviar (and selling it as imported Russian caviar), the fines totaled US\$17,375—less than 1% of the estimated US\$2 million the pair made on the sale (Cohen 1997). In a review of cases of IUU fishing, calculations show that fines must be increased 24 times to deter illegal fishing (Sumaila et al. 2006). Furthermore, the question remains as to how to monitor areas outside national jurisdiction?

One way is to include fishers in decisions and strengthen local participation in management. Fishers are the most creative at circumnavigating fisheries laws and must be drawn into all processes of management to minimize corruption incentives (Raakjaer-Nielsen & Mathiesen 2003). Through their involvement, it is hoped that voluntary compliance will improve. As will be discussed in [Van Santen, this issue], it has been shown that the implementation of individual quotas or catch rights have motivated fishers to monitor themselves thereby reducing corruption.

States must also ensure measures on international trade are transparent. This applies not only to access agreements but also to the movement of seafood products. In terms of access agreements, all information should be public domain and fisheries law should come under review to ensure that power to license fishing vessels is not consolidated but is a public process (FAO 2006). In terms of traceability, the Marine Stewardship Council (MSC) recently implemented a Chain of Custody certification that guarantees fish buyers that their seafood can be traced back through the supply chain from the point of sale to the fishery of origin (MSC 2007), which is a good global model. Five companies have lost their MSC Chain of Custody certifications this year (Fiorillo 2007). [Roheim, Tsayemi, and Bartram papers, this issue]

Obviously, another way to reduce corruption is by reducing excess capacity on the oceans to levels that are sustainable and to fishing fleets that can be policed. Fisheries, particularly industrial ones, which cannot be governed, should not be licensed.

Ocean managers and conservationists should also draw on management experiences for other resources, such as forestry products [Stewart Maginnis this issue]. Following the lead of Transparency International, we suggest creating a global database that would be a useful tool for media investigating fisheries. Civil society organizations have played a role in controlling corruption through, for instance, building public awareness, lobbying governments, and facilitating agreements to combat corruption (Eigen & Eigen-Zucchi 2003). Transparency International's most successful awareness tool has been the Corruption Perception Index, which began in 1995 and ranks countries of the world according to "the degree to which corruption is perceived to exist among public officials and politicians." Why shouldn't a similar Perception Index be built to expose corruption in fisheries?

We propose CIFER: A Corruption Index of Fisheries Enforcement and Regulations. This database could be a merger of much of the information that already exists on the web. Several groups already monitor national behavior to a large extent: e.g., TRAFFIC (a wildlife trade monitoring network set up in 1976), the International Transport Workers' Federation (monitors Flags of Convenience), the *Sea Around Us* Project (monitors country's compliance with the FAO Code of Conduct). Using this information combined and available reports on access agreements and other instances of corrupt behavior, CIFER could rank countries according to their national fisheries performance in the same way Transparency International does.

References:

- ABC. 2005. Japan accused of buying whaling votes. Australian Broadcasting Corporation, July 18, 2005.
- Agnew, D. 2000. The illegal and unregulated fishery for toothfish in the Southern Ocean, and the CCAMLR catch documentation scheme. *Marine Policy* **24**:361-374.
- Atta-Mills, J., J. Alder, and U. R. Sumaila. 2004. The decline of a regional fishign nation: The case of Ghana and West Africa. *Natural Resources Forum* **28**:13-21.
- Bardhan, P. 2006. The Economist's approach to the problem of corruption. *World Development* **34**: 341-348
- Bradsher, K. 2006. North Korea ploy masks ships under other flags. *The New York Times*, New York, October 20, 2006.
- Brooke, J. 2004. Landlocked Mongolia's seafaring tradition. *The New York Times*, New York, July 2, 2004.
- Clover, C. 2006. *The end of the line*. The New Press, New York.
- Cohen, A. 1997. Sturgeon poaching and black market caviar: a case study. *Environmental Biology of Fishes* **48**:423-426.
- Delap, E., and R. Lugg. 1999. Not small fry: Children's work in Bangladesh's shrimp industry. Save the Children Fund (UK) Bangladesh Programme.
- Denn, R. 2003. PCC's 'premium fish' was wrongly labeled. *Seattle Post-Intelligencer*, Seattle, WA, October 24, 2003.
- Eigen, P., and C. Eigen-Zucchi. 2003. Corruption and Public Goods. Pages 576-646 in K. Inge, editor. *Providing Global Public Goods*. Oxford Scholarship Online Monographs.
- EJF, E. J. F. 2003. *Smash & Grab*. Page 36. Environmental Justice Foundation, London, UK.
- FAO. 2001. International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing. Page 24. FAO, Rome.
- FAO. 2006. Workshop on policy coherence for development in fisheries. Page 28. FAO.
- Fiorillo, J. 2007. Companies lose chain of custody certificate. *Intrafish*, November 19, 2007.
- Food and Water Watch. 2007. Import alert: Government fails consumers, falls short on seafood inspections. Page 24. Food and Water Watch, Washington, D.C.
- Gianni, M., and W. Simpson. 2005. Changing nature of high seas fishing: how flags of convenience provide cover for illegal, unreported, and unregulated fishing. Australian Department of Agriculture, Fisheries, and Forestry, International Transport Workers' Federation, and WWF International.
- Harrington, J., R. A. Myers, and A. Rosenberg. 2005. Wasted fishery resources: discarded by-catch in the USA. *Fish and Fisheries* **6**:35-361.
- Hatcher, A., S. Jabbar, O. Thebaud, and E. Bennett. 2000. Normative and social influences affecting compliance with fishery regulations. *Land Economics* **76**:448-462.
- Hauck, M., and M. Kruse. 2006. Fisheries compliance in South Africa: A decade of challenges and reform 1994-2004. *Marine Policy* **30**:74-83.
- Ilnyckyj, M. 2007. The legality and sustainability of European Union fisheries policy in West Africa. *MIT International Review* , pp. 32-41.

- Jacquet, J. L., and D. Pauly. 2008. Trade secrets: Renaming and mislabeling of seafood. *Marine Policy*.
- Joyce, C. 2001. Bribery on whaling admitted by Japan. *The Daily Telegraph*, London, July 19, 2001.
- Kaczynski, V. M., and D. L. Fluharty. 2002. European policies in West Africa: who benefits from fisheries agreements? *Marine Policy* **26**:75-93.
- Knecht, B. 2006. *Hooked: Pirates, Poaching, and the Perfect Fish*. Rodale Books, New York.
- Baku, J. M. 1991. Military expenditures and bureaucratic competition for rents. *Public Choice* **71**:19-31.
- Milledge, S. A., I. K. Gelvas, and A. Ahrends. 2007. Forestry, governance and national development: Lessons learned from a logging boom in southern Tanzania. Page 250. IUCN/TRAFFIC.
- Miller, P. 1999. Investigation of the shrimp industry in Thailand for the Swedish market. Final report for the Swedish Society for Nature Conservation.
- MRAG. 2005. Review of Impacts of Illegal, Unreported and Unregulated Fishing on Developing Countries. Page 178. Marine Resources Assessment Group, Ltd, London.
- MSC. 2007. MSC invests in traceability for sustainable seafood. Marine Stewardship Council.
- NET, N. E. T. 2004. Black market for white gold: the illegal trade in Chilean sea bass. National Environmental Trust, Washington, D.C.
- Nohlgren, S., and T. Tomalin. 2006. The grouper catch. *St. Petersburg Times*, St. Petersburg, August 6, 2006.
- PEER. 2007. High seas harassment of NOAA fishing observers on the rise. Public Employees for Environmental Responsibility.
- Raakjaer-Nielsen, J., and C. Mathiesen. 2003. Important factors influencing rule compliance in fisheries lessons in Denmark. *Marine Policy* **27**.
- Raloff, J. 2006. New estimates of the shark-fin trade. *Science News* **170**.
- Robbins, P. 2000. The rotten institution: corruption in natural resource management. *Political Geography* **19**:423-443.
- Shleifer, A., and R. W. Vishny. 1993. Corruption. *Quarterly Journal of Economics* **108**:599-617.
- Sumaila, U. R., J. Alder, and H. Keith. 2006. Global scope and economics of illegal fishing. *Marine Policy* **30**.
- Supine, J., and K. Kieran. 1999. A socio-economic theory of regulatory compliance. *International Journal of Social Economics* **26**:174-193.
- Tennyson, J. M., K. S. Winters, and K. Powell. 1997. A fish by any other name: A report on species substitution. Paper presented at the 22nd Meeting of Seafood Science and Technology Society of the Americas, Biloxi, Mississippi.
- Watson, R., and D. Pauly. 2001. Systematic distortions in world fisheries catch trends. *Nature* **424**:534-536.
- WHO, W. H. O. 2006. Global and regional food consumption patterns and trends: Availability and consumption of fish.
- Working, R. 1999. Flags of inconvenience; Union campaigns against some foreign ship registry. *The New York Times*, New York, May 22, 1999.

- Worm, B., E. B. Barbier, N. Beaumont, and N. Duffy. 2006. Impacts of biodiversity loss on ocean ecosystem services. *Science* **314**:787-790.
- Young, E. 2001. State intervention and abuse of the commons: Fisheries development in Baja California Sur, Mexico. *Annals of the Association of American Geographers* **91**:283-306.