

## COMMENTARY

## Not honouring the code

Countries are not complying with the UN Code of Conduct for Responsible Fisheries. It's time some changes were made, say **Tony Pitcher, Daniela Kalikoski, Ganapathiraju Pramod and Katherine Short.**

A widely agreed remedy for overfishing, which has dramatically depleted fish populations in the world's oceans, would be to adopt the voluntary Code of Conduct for Responsible Fisheries, developed by the Food and Agriculture Organization of the United Nations in 1995<sup>1</sup>.

The code provides a detailed consensus for the scientific, sustainable, responsible and equitable exploitation of fishery resources. Now, 13 years after its publication, a detailed evaluation for the 53 countries landing 96% of the global marine catch (based on reported catch in 1999) reveals dismayingly poor compliance. To improve matters, we suggest establishing mandatory instruments, either national or international, that echo the specific requirements for compliance with the code, and tailoring aid for developing countries to address specific weaknesses.

In 2004, we began an extensive analysis of the most active fishing countries in the world. We evaluated published and unpublished literature, and probed expert opinion to answer 44 questions<sup>2</sup> about adherence to Article 7 of the code, which covers fisheries management, for the 53 countries<sup>3</sup>. The questions fall into six evaluation fields. The first three measure intentions to comply with the code,

rating a country's balance of conservation and economic aims; its stated management targets; and its use of precaution when expanding fisheries and establishing no-take zones. The remaining questions deal with the effectiveness of day-to-day compliance, including the rigorous use of quantitative reference points, minimizing wasteful discard, by-catch and impact on habitats such as coral reefs; socio-economic factors such as maintaining beneficial small-scale fisheries and coastal communities; and the control of illegal fishing and 'flags of convenience', when ships are registered in countries other than those where they're owned in order to evade regulation.

Questions were scored against criteria on a scale of zero to ten, with upper and lower estimates of confidence provided. We considered a score of seven or better to be 'good'; below four a 'fail' grade; and everything in between to be a 'pass'. Although such simple grades can seem arbitrarily chosen, the threshold criteria used for each question were as objective as possible. Scores were cross-checked, subjected to external validation protocols including preliminary publication online as 'living documents'<sup>3</sup>, and

statistical modelling to deal with uncertainty, all of which is detailed in our final report<sup>4</sup>.

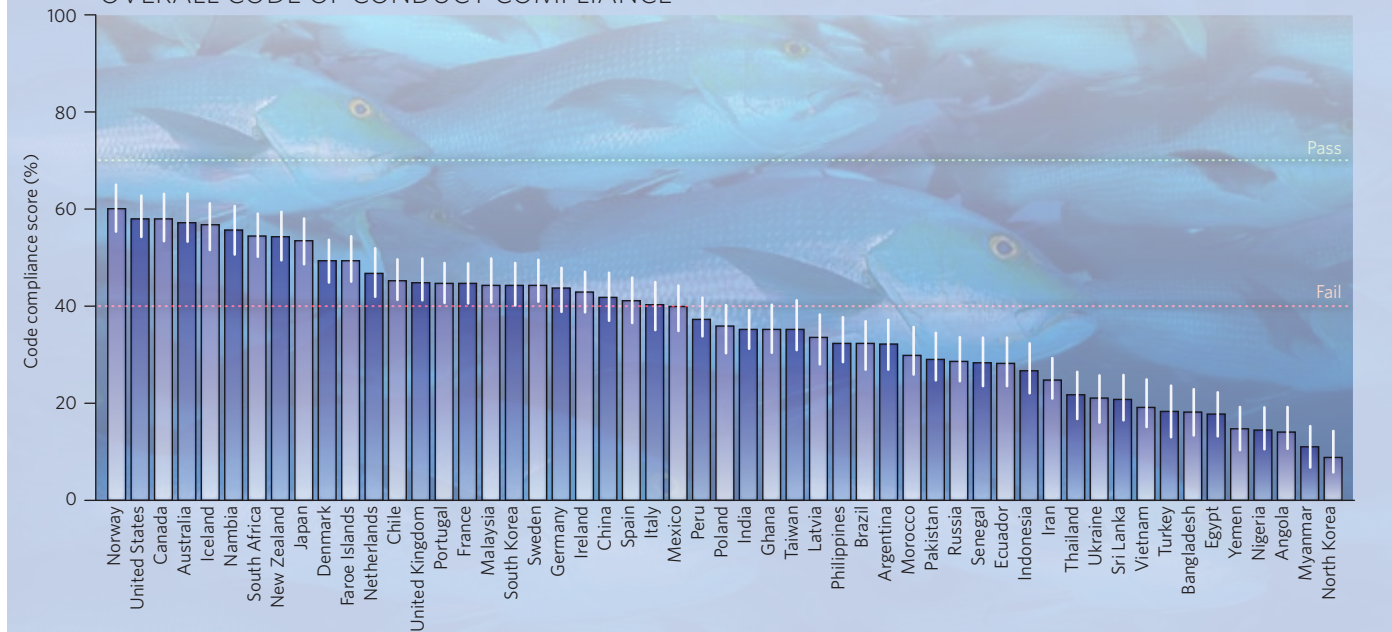
Overall, compliance is poor, with room for improvement at every level in the rankings (Fig. 1). Not one country achieves a score in the good category and the average of all countries' ratings barely exceeds the fail threshold. Only six countries have overall compliance scores whose confidence limits overlap with 60% (Norway, the United States, Canada, Australia, Iceland and Namibia), yet four of these top ranking countries falter by being awarded at least three fail grades, revealing that there is a great deal of room for improvement even for countries at the top of the rankings. Overall, the five questions on which

countries scored worst concerned introducing ecosystem-based management, controlling illegal fishing, reducing excess fishing capacity and minimizing by-catch and destructive fishing practices. At the lower end, 28 countries, representing more than 40% of the world fish catch, had unequivocal fail grades overall. Including confidence limits that overlap the fail threshold raises this to 34 failing countries taking about 60% of the global catch. Twelve

**"The time has come for a new international legal instrument."**

Figure 1

OVERALL CODE OF CONDUCT COMPLIANCE



countries were awarded fail grades in all or most parts of the compliance analysis.

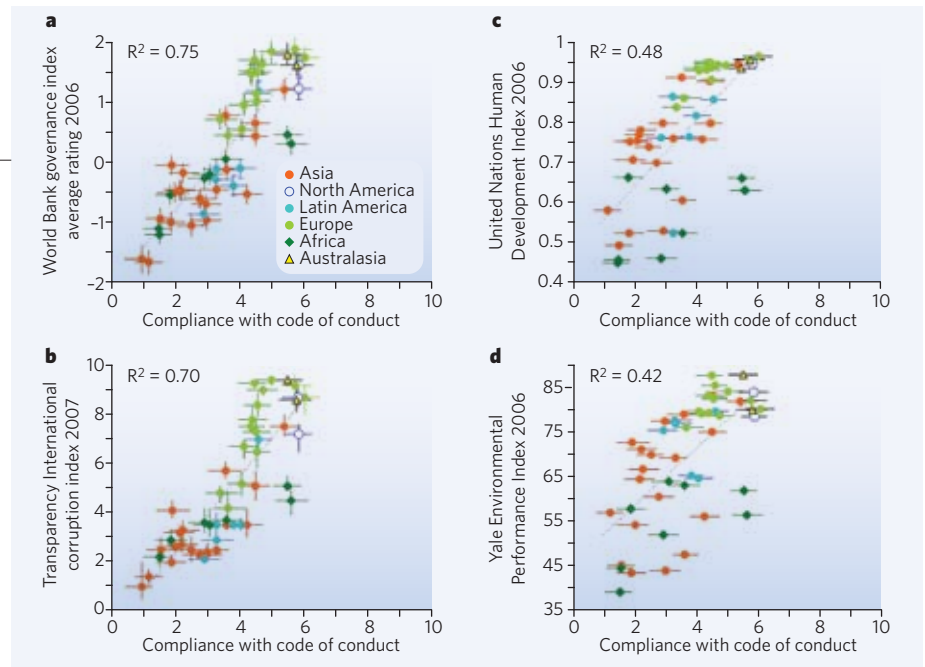
Although intent to comply with the code is high in many countries, intentions unsurprisingly exceed compliance by 9% on average (11% in the top-ranking countries). Taking averages for regions of the world, North America (Canada and the United States,  $n=2$  countries) scored towards the top of the pass range in intentions, and in the mid range for implementation. Australasia ( $n=2$ ) has quite high compliance ratings, with intentions achieving the 'good' range. The averages for African ( $n=8$ ), Asian ( $n=20$ ) and Latin American ( $n=6$ ) countries on the other hand, fail in nearly all categories. Although Europe had some of the highest scores, disappointing scores from some European Union nations, with the undoubted resources and know-how to implement the code, reinforce a low priority given to improving fisheries management.

### Transparent correlation

Some might argue that we have been generous in awarding scores for published legislation or policy documents intending to comply with the code, and that only actual compliance results should be used to rate countries. The code itself, however, encourages formal legislation and makes this distinction. Moreover, the costs of enforcement can be prohibitive, even in relatively prosperous countries. In Canada for example, government auditors have criticized failure to implement ocean-management legislation: an ironic twist considering Canada pioneered drafting the code in the 1990s.

We have compared code compliance with other relevant indicators of country wealth, governance and environmental performance. There is a strong correlation of estimated code compliance with country scores on the World Bank governance index (Fig. 2), which measures such parameters as political stability, violence, corruption and accountability<sup>5</sup>. Figure 2 also shows similar, if weaker, correlation with Transparency International's Corruption Perceptions Index<sup>6</sup>, with the United Nations Human Development Index<sup>7</sup> and, at lower level, with the Yale Environmental Performance Index<sup>8</sup>. Interestingly, there was no significant correlation between code compliance and size of catch or with the Gini coefficient, an index of socio-economic equity. Both had been thought to relate to poor fisheries management.

Some outliers are worth noting. It is encouraging that some developing countries (Malaysia, South Africa and Namibia, for example) scored more highly than many developed European countries and also more highly than the overall trend, signifying that some elements of good fishery management can be



**Figure 2 | Tracking trends.** Comparing code-of-conduct compliance with (a) the World Bank Governance Index (2006,  $n=53$ ); (b) corruption index from Transparency International (2007,  $n=52$ ); (c) UN Human Development Index (2006,  $n=51$ ); (d) Environmental Performance Index (2006,  $n=52$ ). Bars indicate confidence limits where available (broken line shows linear trend and  $R^2$ , coefficient of determination).

achieved with limited resources. There are considerable differences between these countries, although in each case targeted development aid is likely to have been a factor. Namibia, for example, received fisheries aid from Scandinavia and inherited fairly well-manged fisheries from South Africa.

The poorer compliance of many EU countries than their governance and resources would indicate is possibly partly as a result of a dysfunctional Common Fisheries Policy. Norway and Iceland (both non-EU countries), have much better compliance, perhaps because of heavier reliance on fisheries in their national economies and a long Scandinavian tradition of support for code development — including overseas aid and national measures such as a ban on discarding unwanted fish at sea, effective control of illegal fishing and precautionary fishing targets. The reasons underlying these outliers would make good topics for further research.

We draw two main conclusions from our work. First, compliance scores from developed nations are on average twice as high as those from developing nations, although some notable developing countries with limited resources have scored quite well. Compliance in poorer countries could be boosted through development aid targeted on issues where code compliance is weak. For example, surveillance has been improved in Thai, Moroccan and Malaysian fisheries through aid providing new patrol vessels and modern electronic monitoring devices. Training in quantitative stock assessment and formal management-strategy evaluation using target and limit reference points has been sponsored in several Asian countries.

Second, although the voluntary nature of

the code may have been necessary in getting all-nation agreement when it was drafted in the early 1990s, attitudes to the oceans have changed. There is now widespread scientific consensus on the ecological impacts of continued overfishing and the threats to sea-food security, and broad agreement on policy issues such as curtailing illegal catches<sup>9</sup> and minimising the impacts of fishing on marine ecosystems. The time has come for a new integrated international legal instrument covering all aspects of fisheries management. ■

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1. *Code of Conduct for Responsible Fisheries*. (FAO, 1995). Available at: [ftp://ftp.fao.org/docrep/fao/005/v9878e/v9878e00.pdf](http://ftp.fao.org/docrep/fao/005/v9878e/v9878e00.pdf)
2. Pitcher, T. J. *Rapfish, A Rapid Appraisal Technique for Fisheries, and its Application to the Code of Conduct for Responsible Fisheries*. FAO Fisheries Circular No. 947 (1999).
3. Pitcher, T. J., Kalikoski, D. & Pramod, G. (eds) *Evaluations of Compliance with the UN Code of Conduct for Responsible Fisheries*. Fisheries Centre Research Reports 14, 1192pp. (2006).
4. Pitcher, T. J., Kalikoski, D., Pramod, G. & Short, K. *Safe Conduct? Twelve Years Fishing under the UN Code*. (WWF, 2009). Available at: [http://assets.panda.org/downloads/un\\_code.pdf](http://assets.panda.org/downloads/un_code.pdf)
5. [www.worldbank.org/wbi/governance/govdata](http://www.worldbank.org/wbi/governance/govdata)
6. [www.transparency.org/cpi](http://www.transparency.org/cpi)
7. <http://hdr.undp.org/en/statistics/indices/hdi>
8. Esty, D. C. et al. *Pilot 2006 Environmental Performance Index*. (Yale Center for Environmental Law & Policy, 2006). Available at [http://www.yale.edu/epi/2006EPI\\_MainReport.pdf](http://www.yale.edu/epi/2006EPI_MainReport.pdf)
9. Agnew, D. et al. *PLoS ONE* (in the press).

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