Editorial

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Biographical notes: R. Quentin Grafton is a Professor of Economics at the Crawford School of Economics and Government at the Australian National University. He has authored more than 50 papers in international journals, more than a dozen chapters in books and seven books. His most recent work, *Economics for Fisheries Management* (co-authored with Jim Kirkley, Tom Kompas and Dale Squires) is published by Ashgate (2006). He has been an expert witness for various legislative bodies (such as Senate of Canada), consulted for various international organisations (such as OECD) and been the recipient of prestigious research awards (such as the Premier's Research Excellence Award).

1 Introduction

This Special Issue of the *International Journal of Global Environmental Issues* is entitled 'Sustaining global fisheries: challenges and choices'. It represents a collective effort of some of the leading thinkers in capture fisheries to document the current state of global fisheries and to offer ways forward. All the contributions went through a rigorous double-blind review process with two referees.

Capture fisheries face many challenges. A much reported statistic of the Food and Agriculture Organization (FAO, 2005), noted by several authors in this Special Issue, is that half of the world's fisheries are fully exploited (no further increase in yields are possible on a sustained basis without changing stock levels), a quarter are overexploited (current yields are not sustainable) and a quarter are underexploited (sustained yields could be increased). What is much less reported, but noted by Sanchirico and Wilen in this volume, is that world capture fisheries generate an annual loss of about \$20 billion/year. If we account for the potential gains from better management and rebuilding of depleted stocks, Sanchirico and Wilen argue that this loss could be transformed into a \$90 billion economic surplus. It suggests that 'business as usual' that leads to economic overfishing and the race to fish is costing fishers and their communities more than a \$100 billion/year.

Several case studies of national and international fisheries support the diagnosis – current fisheries management and practices are, at best, well below potential. Kirkley, Walden and Ward review the trends in US capture fisheries and conclude that 'command and control' approaches to fisheries management that are widely practised

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offer little hope for increased prosperity and argue for a more economics focused approach. In particular, they present the case for greater use of market-based instruments to regulate fisheries and fishers. Hannesson provides a detailed review of the Northeast Arctic cod fishery shared by Norway and Russia and illustrates past management pitfalls including subsidisation of fleets and difficulties of enforcement. The fact that fish stocks have, in the past, recovered from overfishing and that policies to subsidise fleets have been abandoned, coupled with greater restrictions on access offers some hope that managers can learn from past mistakes and adapt to changing circumstances.

Pascoe and Burnett describe the difficulties of managing international fisheries. By any standards, the North Sea cod fishery offers an example of what should not be done - harvest levels have been consistently too high that places the stock at risk, economic returns are negative for the fishery as a whole and command and control regulations have failed to prevent overcapacity. Despite the poor state of affairs, property rights in the form of individual harvesting rights in the UK and The Netherlands offer hope for the future of North Sea fisheries. Kompas and Gooday provide examples from Australia to show fisheries governance is the key to better outcomes. The northern prawn fishery demonstrates that regulations designed to control fishing effort with limits on fishing inputs failed to prevent effort creep that has led to overcapacity and contributed to poor returns. This is because fishers are almost always able to substitute to non-regulated inputs to circumvent effort controls, often at the expense of efficiency. An evaluation of the south-east trawl fishery of Australia, managed by individual harvesting rights called Individual Transferable Quotas (ITQs), emphasises the importance of effective monitoring and enforcement and also the need to set appropriate targets for the Total Allowable Catch (TAC). In this fishery, ITQs failed to deliver on their promise because the targets or TACs were non-binding such that fishers had little incentive to change their practices.

In addition to the detailed case studies, the Special Issue includes innovative contributions on how to move forward to overcome the challenges of fisheries management. Rice offers his perspective on three approaches:

- 1 rights-based management that can overcome the problems of unsustainable practices and overcapacity
- 2 eco-certification, as offered by the Marine Stewardship Council, to reward sustainable practices in the market place and
- 3 closed areas or marine reserves.

He also argues for a greater connection between fisheries scientists and ecologists and their economist colleagues. Wilson also stresses the importance of a multi and cross-disciplinary approach in his contribution on fisheries in developing countries. Using examples from Tanzania and Madagascar he stresses that the nature of governance (especially problems associated with corruption) has an important impact on what should be done in terms of fisheries management. Wilson also argues that fisheries managers need to pay close attention to economic and social issues beyond the fisheries sector. St. Martin, McCay, Murray, Johnson and Oles emphasise the need for a 'bigger picture' in fisheries management. They show the importance of Local Ecological Knowledge (LEK) and that it provides an important link between communities and ecosystems that can be used to generate new understandings and to improve fisheries management.

Campbell and Kennedy illustrate the difficulties of generating knowledge and predicting outcomes in fisheries using their study of Southern Bluefin Tuna. They

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recommend a reduction in catch to meet both economic and conservation goals. In addition, they show the inherent difficulties in managing transboundary resources especially in terms of accurate monitoring and enforcement of infractions.

The volume concludes with an insightful contribution by Holland on the management options to address environmental impacts of fishing. He shows that outcome-based approaches offer an alternative to traditional input-based controls, but they do require effective monitoring and compliance and their use is limited by uncertainty over the actions of fishers. To illustrate the potential of outcome-based approaches, Holland describes how habitat impact quotas can be used to provide incentives to fishers to reduce the impact of fishing.

Collectively the 10 contributions from the 20 authors in this Special Issue offer a major step forward in both understanding and improving fisheries outcomes. The challenges ahead are formidable for capture fisheries. However, the ideas offered in this volume provide a major step forward and a 'must read' for everyone involved in the complex business of managing fisheries to ensure sustainability fish stocks and viable and resilient fishing communities.

Reference

Food and Agriculture Organization (FAO) (2005) 'Review of the state of world marine fishery resource', *FOA Fisheries Technical Paper 457*, Food and Agriculture Organization of the United Nations, Rome, Italy.