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Ecosystem-Based Management in Multilateral Environmental Agreements:

Progress towards Adopting the Ecosystem Approach in the International Management of Living Marine Resources

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Executive Summary

Note: This document containes the Executive Summary of the full report which is available at: *http://globelaw.com/Whales/*

Introduction

This paper examines various multilateral environmental agreements which are concerned with the management of living marine resources in order to elicit the way in which ecosystem-based management and the ecosystem approach are addressed in these instruments or applied in the decisions and recommendations made under the conventions. It is particularly concerned with the meaning, scope, and implications of the ecosystem approach for the management of marine ecosystems, particularly within multilateral environmental agreements. It is also concerned with the implications of the ecosystem approach for the management of predators such as whales, as well as the management of associated and dependent species and species at different trophic levels, i.e. at different levels in the food chain.

The paper examines the meaning of ecosystem-based management (EBM) and the ecosystem approach, their definition and implications. In so doing, it discusses the linkages between EBM, the ecosystem approach and the ecosystem approach to fisheries, as well as the meaning of sustainability. The recent promotion of the ecosystem approach within the United Nations General Assembly, including its ICP (informal consultative process on oceans and the law of the sea) and its Sustainable Fisheries and Oceans resolutions and the framework of the Law of the Sea Convention and the Fish Stocks Agreement is described, as is the role of the Food and Agriculture Organization (FAO) and its various instruments. A brief survey of the adoption of the ecosystem approach in Regional Fisheries Mamagement Organisations (RFMOs) follows. A number of multilateral environmental agreements concerned with the international management of living marine resources are examined, including the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Ramsar Convention, the Convention on Migratory Species (CMS), conventions related to Antarctica, international watercourse conventions and the International Convention for the Regulation of Whaling.

Definition of Ecosystem Approach

This analysis shows that the internationally understood definition and implication of the ecosystem approach is as follows. The ecosystem approach emphasises a holistic, participatory and integrated approach and is contrasted with a more narrowly focused biological and usually single species-oriented approach. It aims to manage human interactions with ecosystems and all associated organisms, rather than only individual species. As the term ecosystem-based management shows, it is management based on the properties of the relevant ecosystem(s), rather than a single species. The focus of management is maintaining the natural structure and function of ecosystems, including the biodiversity and productivity of natural systems and identified important species. In the fisheries context, the ecosystem approach recognises that fisheries need to be managed so as to avoid harm to the ecosystem. The ecosystem approach has implications across the environmental spectrum, from fisheries to marine conservation in the broader sense, through to the goals of sustainable development. The decline of diversity in the oceans shows the importance and urgency of the implementation of the ecosystem approach.

The ecosystem approach has a multi-species focus: the top predator species, the target species of the fishery, and associated and dependent species are all to be considered. The removal of top predators can have implications for stability of ecosystems, species removals or additions can invoke major shifts in community structure and dynamics, and the collapse of a prey species has been associated with mortality of mammals, birds and predatory fishes.

The ecosystem approach therefore has implications for the management of whales. There are sometimes suggestions that whales compete with commercially fished fish species, and that whales should be managed, or culled, to protect fisheries. However the ecosystem approach requires an integrated and adaptive approach to management, rather than intervention or manipulation aimed at single species. The ecosystem approach requires the management of fisheries to avoid harm to natural populations, rather than the management of marine mammal populations to attempt to avoid harm to fisheries. In fact, over-fishing tends to lead to a decline in large predators, and lower-level marine life being increasingly used for human consumption, to the detriment of higher predators.

None of the elements of the ecosystem approach developed by the FAO, or most recently by ICP, mandate an *ad hoc* approach to marine conservation, still less manipulation of the marine environment or top predator populations. Instead, a holistic, ecosystem-based precautionary approach is mandated aimed at conserving ecosystem integrity.

WWF has produced detailed guidance on both policy and operational implementation for ecosystem-based management in Ward *et al*'s *Policy Proposals and Operational Guidance for Ecosystem-Based Management of Marine Capture Fisheries*,[1] and Grieve *et al*'s *Implementation of Ecosystem-Based Management in Marine Capture Fisheries, Case Studies from WWF's Marine Ecoregions*.[2] These elaborate that EBM provides a comprehensive approach enabling marine ecosystems, extractive industries and the communities and livelihoods that rely upon them to thrive.

Incorporation of the Ecosystem Approach in Multilateral Environmental Instruments

The development of the ecosystem approach can be traced to the 1972 UN Conference on Human Environment, but international institutional development has been slow. While there was some progress in the 1980s, notably with the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) and the 1982 Law of the Sea Convention, development accelerated in the 1990s, and in particular the 1992 Rio Declaration and Agenda 21, the FAO Code of Conduct and the 1995 UN Fish Stocks Agreement were important cornerstones in the development of the approach. This decade, the institutional development of the ecosystem approach can be traced to the 2000 CBD Decision V/6, which laid down principles for guidance in applying the ecosystem approach, and the 2001 Reykjavik Declaration, which recognised the importance of interactions between fishery resources and all components of the ecosystem, and the need to conserve marine environments. The Johannesburg Programme of Implementation (JPOI) in the same year called for the application of the ecosystem approach by 2010.

RFMOs that incorporate the ecosystem approach are few, but progress is being made. CCAMLR is the signal example of the systematic implementation of the ecosystem approach, and is especially notable considering its early adoption in 1980. The Convention for the Conservation and Management of Fisheries Resources in the South East Atlantic Ocean (SEAFO) and the South Indian Ocean Fisheries Agreement (SIOFA) are two recent examples from this decade of RFMOs that incorporate the ecosystem approach, and the Inter-American Tropical Tuna Commission's (IATTC) new 2003 Antigua Convention takes account of it also. The Convention on Future Multilateral Co-operation in North-East Atlantic Fisheries (NEAFC) and the Northwest Atlantic Fisheries Organisation (NAFO) are in the process of amending their constituent conventions to take account of the ecosystem approach, as well as the precautionary approach. The International Council for the Exploration of the Sea (ICES) started implementing the ecosystem approach as the basis for its advice in 2004. The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and HELCOM's 2003 Bremen Statement was an important declaration of the ecosystem approach and notice of intent to focus on the approach.

From this brief survey of RFMO instruments it can be seen that with the principal exception of CCAMLR, the adoption of the ecosystem approach is a function of the date of conclusion of the instrument, and it follows that the earlier instruments which did not incorporate the ecosystem approach, like NAFO and NEAFC, need to amend their Conventions to adopt the approach.

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[1] Trevor Ward et al, *Policy Proposals and Operational Guidance for Ecosystem-Based Management of Marine Capture Fisheries* (2002) ('WWF EBM Guidance '). Available at http://assets.panda.org/downloads/WWF_EBMFisheries_FullDoc.pdf.

[2] Chris Grieve and Katherine Short, *Implementation of Ecosystem-Based Management in Marine Capture Fisheries, Case Studies from WWF's Marine Ecoregions* (2007) ("Grieve et al"). Available at http://panda.org/about_wwf/what_we_do/marine/publications/index.cfm?uNewsID=94920.

Ecosystem-Based Management in Multilateral Environmental Agreements

Among multilateral environmental agreements, the 1992 CBD, with its focus on biodiversity, is a leader in the adoption of the ecosystem approach. It adopted the ecosystem approach in 1995 and has since elaborated it, and continues to promote and implement it, including in the Jakarta Mandate and Intergrated Marine and Coastal Area Management (IMCAM). The CITES Convention refers to the role of a species in its ecosystem, and practice within CITES takes account of the ecosystem approach, and synergies between CITES and the CBD are being pursued. Parties under the 1971 Ramsar Convention have endorsed the ecosystem approach. The 1979 CMS or Bonn Convention does take into account ecosystems in assessing conservation status and thus considers migratory species in their ecosystem context, and there are a number of references to the importance of ecology and sound ecological principles.

Other outstanding examples of the application of the ecosystem approach are to be found in the Antarctic conventions. In the 1991 Madrid Protocol, Parties commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems, and establish a comprehensive system of environmental impact assessment to that end. CCAMLR defines its application by reference to the Antarctic Convergence, itself an ecological boundary. The prevention of irreversible changes in the marine ecosystem is one of its principles, and conservation measures are to include measures concerning the effects of harvesting and associated activities on components of the marine ecosystem other than the harvested populations. Another Antarctic convention, the Albatross and Petrels Convention, implements many elements of the ecosystem approach and, similar to the CMS, assesses conversation status in terms of diverse influences acting on the species that may affect its long-term distribution and abundance, including habitat, and measures are to be taken to conserve and restore habitats.

The International Whaling Commission (IWC)'s constituent instrument, the International Convention on the Regulation of Whaling (ICRW), is a very early convention, having been adopted in 1946. The ICRW in itself does not incorporate the ecosystem approach, which was developed decades after the conclusion of the Convention. The Convention is oriented towards safeguarding whale stocks for later exploitation, with a strong focus is on the future of the whaling industry. The stated goal is to achieve the optimum level of whale stocks as rapidly as possible, without causing widespread economic and nutritional distress. Thus ecosystem approach considerations such as whale habitat, prey depletion, marine ecosystem integrity, are not specifically incorporated. It has been recognized since the Reykjavik Declaration, the CBD's Decision V/6 and the JPOI that an ecosystem approach to management should be adopted and that single-species management, such as management of whales alone, is inadequate. An IWC resolution in 2001 on whale-fish interaction decided to prioritize the study of interactions between whale and fish stocks and agreed for studies to be holistic and balanced. However since then, the Conservation Committee has been divided and unable to break an impasse on many significant issues.

The 59th Annual Meeting of the IWC last year adopted a controversial resolution termed the "St Kitts and Nevis Declaration." This Declaration stated that 'ecosystem management' has now become an international norm, and that the issue of management of whale stocks must be considered in a broader context of ecosystem management. The Declaration stated that Commissioners cited the need for science-based policy and rulemaking that are accepted as the world standard for the management of marine resources. However, the St. Kitts and Nevis Declaration erroneously uses the term ecosystem management to refer to the culling of whale stocks to increase fish stocks. The above analysis shows this is contrary to international norms. The ecosystem approach as shown in this paper with relation to marine mammals requires its implementation in its entirety, including the importance of predator diversity, predator-prey relationships, the abundance of predators and species competing for the same trophic resources, allocation of some of the potential yield of a prey species to the predator rather than all being allocated to the fishery targeting the prey species, the ecosystem effects of the loss of predators at high trophic levels, the role of habitat, and other impacts on whales such as climate change, entanglement, and pollution, as well as other aspects of ecosystem-based management. Furthermore, the term ecosystem management in itself is a misnomer. Humans can not manage ecosystems; they can only manage human actions with consequent results for ecosystems. The term 'ecosystem management' is thus outmoded, and the term 'ecosystem approach' is now the internationally accepted norm. Statements in the Declaration attempt to use the ecosystem approach in a way that is contrary to agreed international norms, and run contrary to the considerable progress that has been made by many governments, institutions and multilateral agreements to build international consensus and understanding of this concept. Also as is noted in this paper, as fish catches increase, the primary production available to marine mammals may decrease, raising the possibility that RFMOs may need to take into account the indirect effect of fish catches on other species such as marine mammals when setting total allowable catches (TACs.)

Conclusion

As noted in this paper, there are a number of international declarations, decisions and documents explaining what the ecosystem approach is and what it entails. It is clear that there is now an internationally agreed and accepted definition and understanding of the ecosystem approach and its application to fisheries.

However there are still some instances of erroneous uses of the term ecosystem approach, particularly relating to marine mammal management. Guidance from expert international fora concerned with the marine environment is important to ensure that statements in resolutions contrary to international practice are not made in the future.

The analysis demonstrates that now is the time to build on the global understanding and acceptance of the ecosystem approach that has been achieved to date by providing appropriate resources, capacity and expertise to allow full and widespread application of the ecosystem approach in management of the marine environment across the globe.