GOVERNANCE FOR FISHERIES AND MARINE CONSERVATION

INTRODUCTION

Serge M. Garcia, Jake Rice and Anthony Charles

This book examines the interface between the governance of marine fisheries on the one hand, and that of marine biodiversity and ecosystem conservation on the other. It identifies their interactions at different scales and in various institutions, as well as their respective principles, conceptual objectives, policies, plans, processes and operational instruments. The book identifies and focuses on conceptual and operational synergies and conflicts as well as duplications and gaps. The key goal is to improve understanding of both governance systems and thereby to facilitate their improved coherence. This fits with the prime objectives of the Fisheries Expert Group of the IUCN Commission on Ecosystem Management (IUCN-CEM-FEG).

The book examines also the distinctive characteristics of the two streams of governance, and the involvement of different ministries, institutions and legislative instruments at all levels. It provides a wide variety of concrete case studies, at a variety of spatial and temporal scales, offering perspectives on their co-evolution in time and space, and exploring impediments to faster and more effective implementation of coherent policies. The book examines the distinctive characteristics of the two streams of governance, and the involvement of different ministries, institutions and legislative instruments at all levels.

Starting from scientific perspectives with different histories, the two streams of governance are accountable to different mixes of stakeholders, and aim at partially overlapping but not totally identical goals. Indeed, the streams may differ in terms of the relative importance given to human benefits vs. ecosystem protection, the valuing of different ecosystem components (e.g. fishery resources vs. biodiversity); the role of humans (as a source of problems vs. recipients of benefits); priority time frames; operational objectives; tolerance for different types of risks; management approaches (e.g. resource vs. space-based); perceptions of knowledge gaps (ecological vs. socio-economic) and methods used for diagnoses. The two streams may compete for social legitimacy, political influence and funding.

Despite these differences, governance systems for marine fishery resources and for biodiversity conservation both recognize (i) that the conservation of a functioning ecosystem is a sine qua non condition for having a responsible fishery sector; (ii) that there is a need for simultaneous satisfaction of human and ecosystem wellbeing; and (iii) that there is a central role of ‘good governance’ principles.

Efforts are being made to create institutional bridges at global, regional and national levels. The present situation reflects a progressive closure of the historical dichotomy between nature conservation and human development in a difficult search for balance between two complex, partly overlapping sets of goals, priorities and constraints. Many points of friction remain. However, without a better integration of assessment, decision and performance evaluation processes, both streams are likely to fail to achieve their main goals. The book offers advice as to how this better integration could be achieved.

Terminology

The book contains a few notions that cut across the various chapters and need to be exposed upfront to reduce uncertainty for the reader and improve coherence between chapters. Many of the concepts underpinning conservation of fishery resources and, more generally, of biodiversity, have been described, defined, explained, in numerous documents. The result is a complex flurry of often confusing literature reflecting the authors’ idiosyncrasies, turf demarcation of slightly different school of thoughts, ideological slants, etc. The simpler expressions are often the easiest to agree with but also to reinterpret in different contexts. The term “conservation” itself is an excellent example of the problem with its different interpretations in ecology, fishery science, or social sciences, ranging between total protection to sustainable use. The terms “biodiversity” and “governance” may also mean different things to different users. Generalizing the comment made by Sutherland’s (1968: 6) in reference to “biodiversity”, it is doubtful whether a common single meaning is achievable or even desirable or that prescribing a standard terminology is effective. The variety of viewpoints on one term may have significant roles to play and it is important to clarify the way one uses the term, to avoid confusion, misunderstanding, and unnecessary arguments. This introductory section of the book provides a common background to all authors and nuances or differences are further spelled out in the relevant chapters.
This document is the synopsis of a book to be published in 2013 by Wiley-Blackwell. The book is being prepared by a panel of leading experts in the governance of marine fisheries and biodiversity conservation, at the initiative and with contributions of the Fisheries Expert Group of the IUCN Commission on Ecosystem Management, under the coordination of the European Board of Conservation and Development (EBCD). The synopsis was elaborated at an international scientific workshop hosted by the Institute of Marine Research in Bergen (Norway, 25-27 March 2012) with the support of the Norwegian Agency for Development Cooperation (Norad), the Norwegian Ministry of fisheries and Coastal affairs with some contributions from the Fisheries and Oceans of Canada, the Global Guardian Trust of Japan, the French National committee of France and the IUCN Committee of Ecosystem Management. The final product may slightly differ from this synopsis in both structure and content.
PART I: CHALLENGES AND TRENDS

Governance of fisheries and marine conservation: the integration challenge
Serge M. Garcia, Anthony Charles, and Jake Rice

The progressive broadening of the conventional conservation mandate and obligations of fishery managers in relation to target fishery resources, associated and dependent species and the various components of biodiversity call for better “integration” of the two distinct streams of governance dealing with fisheries and biodiversity around the concept of sustainable use. Such Integration is often undefined and recognizing its potential benefits and costs, it is defined as the reduction of “functional distance” between the two streams of governance…filling gaps, increasing coherence, promoting synergy and reducing interaction costs…through information exchange, consultation, cooperation, as appropriate, and systematic application of good governance principles.

Recognizing that “integration” started decades ago but progressed too slowly and heterogeneously, the chapter argues for better, faster and adapted integration of different phases of the two governance processes, trying to optimize the cost/benefits ratio of the process. In this regard, it draws attention on: (1) the need to define specifically the aim of such integration (from “merger” to “take over”); (2) the scale at which such integration is needed (from the global to local levels); (3) the role of integrative instruments, of a legal, institutional, policy, normative, procedural or methodological nature; (4) the levels of integration possible, between independent decision and total merger of the respective institutions, and their time and cost scales.

The chapter describes the “integration field”, illustrating the different and complementary mandates of both governance streams, the factors of convergence and divergence between them, including some of the key tumble stones. It also highlights the significant degree of convergence already achieved at conceptual and institutional level. It shows the “bridges” that exist in common principles (e.g. hard sustainability), concepts and approaches (e.g. ecosystem approach; green growth); constraints (e.g. of socioeconomic and political nature), and external drivers (e.g. demography, democracy, globalisation, markets), facilitating convergence. It also stresses some key sources of conflict.

The standard integration “directives” for sustainable development (e.g. in the 1980 World Conservation Strategy or the 1987 Bruntland report) include: review of policy and legal frameworks; development of common understanding; fostering of political commitment and leadership; mobilization of adequate implementation means; institutional development; conflict resolution mechanisms; stakeholder involvement; procedural enhancements; improved knowledge base; systematic performance assessment. Important challenges remain however: (1) lengthy legislative processes; (2) insufficient scientific and administrative capacity at local and central levels and (3) insufficient attention to designing viable transitional pathways. They are still needed in each governance stream to accelerate its capacity to converge with the other. The integration process, already evolved at global level could progress faster, e.g. through: (i) integrated assessments (between disciplines and streams) and (ii) the development of higher-level integrative space-based policy frameworks at national and regional level, keeping in mind the fact that the higher the scale of integration the farther away from the people concerned. There are particular issues in the high seas where the rights and duties of States are still being specified and instruments developed to help fulfill them. The present debate around sustainable use of biodiversity in ABNJ is trueing the maturity of the actors’ institutions and their real willingness to accommodate both conservation and development concerns under sustainable use.

History and trends in marine fisheries and conservation governance: 1850-2012
Serge M. Garcia, Anthony Charles, and Jake Rice

The historical developments in the governance of fishery resources and biodiversity conservation are described based on a detailed timeline of events having influenced both streams since 1850, with a focus on marine conservation after the 1960s. Modern fisheries management has emerged from the nature conservation movement in the mid-19th century, together with water, soils, forests and wildlife management. Since then, the governance of fisheries and nature conservation have evolved as parallel streams (as anthropocentric (utilitarian) and ecocentric (aesthetic) branches) with increasing policy and institutional overlap in a context of increasing and progressively globalized industrialization. In each stream a number of key strands have traced progress in e.g.: from protectionism to sustainable use; Integrated Conservation and Development; institutional development and the quest for global governance; application of the precautionary principle; relation between science and policy-making; rising environmental awareness; participation of stakeholders; use rights; space-based integration. With strong connections with chapter 1, this chapter describes the main phases and stands in the development of modern governance of fisheries and biodiversity conservation. Their respective successes and failures have shaped their coevolution in an adaptive processes leading to growing convergence between the respective paradigms towards sustainable development/use. The evolution of management concepts from a populist/traditional governance to a neo-liberal/rights-based one and from a top-down state-based governance to a participative one based on “good governance” is strikingly similar. It underlines the role of external policy drivers in the coevolution of both streams. The timeline developed illustrates the increase on key events of relevance for the 2 streams as well as a significant increase, since 1970, in the number of events/initiatives of interest to both streams, showing convergence. The chapter identifies also sources of conflict and opportunities for collaboration as both streams face present and future challenges, in the EEZs and in the area as beyond national jurisdiction (ABNJ). It shows that, through growing convergence, original conflicts have significantly decreased but that residual (mainly operational) ones remain. New conflicts (and opportunities for cooperation) are emerging and painful strategic choices are to be made for their solution as new ocean areas are colonized (in the high seas and deep seas), space-based management is introduced. Examples are given of positive initiatives towards greater coherence between the two streams of governance, as well as examples of “resistance” or friction in both of them and reasonable compromises are needed to progress further on the difficult path to sustainable use of marine biodiversity.

The chapter will highlight historical changes since World War II in the principles, concepts and strategic goals of fisheries management and conservation policies, highlighting areas of convergence, divergence and conflict. It will serve as a backdrop for the other chapters. An evolution of the underlying ocean law will also be sketched. Examples will be given to highlight key ‘evolutionary’ advances. The chapter will highlight the tensions and opportunities emerging in the process.
PART II: GOVERNANCE INSTRUMENTS AND DIMENSIONS

Policy and management instruments: fisheries and conservation
Blaise Kuemlangan, Lori Ridgeway and Jessica Sanders

The chapter focuses on the main policy and management instruments (area- and resource-based) available today in fisheries management and conservation of biodiversity. The relationships between such instruments and related international legal frameworks are described to highlight the basis of, and the influence the legal frameworks have had on the content and approaches inherent in the policy and management instruments in both governance streams. For each instrument, the authors highlight the potential (and relative) contribution to both fisheries and biodiversity conservation, notable features, and their synergies or conflicts with some emphasis on processes and regional differentiation (e.g. developed versus developing areas; adjudicated versus negotiation processes and high seas versus EEZs). The respective reaction to the growing pressures for space and resources reallocations in both governance streams is compared. The approaches common to fisheries resources and biodiversity conservation governance are stressed. More specifically the chapter looks at what the ecosystem approach under its various acronyms (EA, EAF, EBF, EBM, EAM) and the precautionary approach and principle mean to the two communities. Finally the chapter shows the increasing infusion of conservation concerns into fisheries governance as well as the progressive emergence of integrated spatial frameworks (e.g. MPAs, ICAM, Marine Spatial Planning) that demonstrate the encouraging convergence in certain approaches in the fisheries management and conservation of biodiversity governance streams.

Bio-ecological dimension of fisheries and conservation governance
Jake Rice and Pamela Mace

The chapter presents the bio-ecological context within which fisheries management and biodiversity conservation occur. The first section presents a concise history of the development of thinking and theory in this area. It commences with fisheries population dynamics, considers how ecological and biodiversity theory became the basis for conservation biology, and how those ecosystem considerations later began to be taken up in a broadening of the basis for an ecosystem approach to fisheries. This section highlights how the bio-ecological objectives of fisheries management and conservation biology emerged, their foci had some common features regard maintaining ecosystem functionality, but also key differences. Fisheries objectives generally included provision of large and sustainable yields from populations that were usually large and productive, whereas conservation biology gave priority to objectives focused on minimizing risk of populations what were uncommon and vulnerable. The middle section of the chapter then reviews the four classes of ecosystem effects of fishing, as recognized in the ecosystem approach to fisheries. These include the direct impacts on target species, direct impacts on species that are not targeted, indirect impacts on ecosystem processes through habitat alterations, and indirect impacts on ecosystem processes through altering food webs. For each theme first the bio-ecological basis for the theme is reviewed briefly, and then the governance approaches and management measures applied by fisheries management and by conservation of biodiversity to address the impacts are discussed. This section summarizes the major benchmarks each perspective has evolved to address the first order considerations, and what progress has been made on the second-order considerations. The final section first summarizes the major similarities and differences in governance and management between the streams that were identified in the middle section. It discusses their implications for success of policy and management of each stream separately, and for coherence of policy and practice between streams. The chapter concludes with recent innovations that have potential to increase convergence and coherence in the governance in these areas of overlap, including initiatives like eco-certification, EIAs and SEAs, co-management, and the roles of various civil society groups in the two streams of governance.

Economic dimension of fisheries and conservation governance
Susan Hanna

Governance integrates natural and human systems. In this dynamic pursuit, economics plays a fundamental role. Economics lies at the heart of public goals for resources, rules of access, individual behaviors, and organizational structures. This chapter highlights the economic concepts in play in the public sphere of fisheries and marine conservation and discusses how they shape behavior, generating both synergies and conflicts. It begins with a summary of the economic perspective and describes the role of context, motivations and incentives in influencing economic behavior. It addresses the scope of economics in governance, tracing the evolution of thinking about economics and its role in the management of marine ecosystems. It presents examples of the implementation of economic ideas in the form of instruments for fishery management and marine conservation, outlining the basic problems to be addressed and the structural options for their resolution. It examines the empirical evidence of the performance of economic instruments in promoting management and conservation objectives, identifying key factors influencing outcomes. Combinations of economic instruments, contexts and processes that promote successful integration of fisheries and conservation governance are highlighted.

Social dimension of fisheries and conservation governance
Bjorn Hersoug

The chapter describes the social dimension of fisheries and conservation governance with selected illustrations from various developed and developing countries. The main message is that the social dimension has most often been marginalized in both approaches. For the social dimension to figure more prominently - as a requirement for more legitimate governance - there is a need for stronger consultation...
(including with the more marginal groups) and working co-management arrangements and, possibly, also new institutional set-ups.

The classical account of two cultures (C. P. Snow) indicates that, from the outset, fisheries management and conservation may represent different worlds. On closer examination, we find that the two sectors may have partly overlapping goals, although their strategies and stakeholders may differ. The ecosystem approach to fisheries (EAF) and more attention to social concerns in conservation may open up for closer cooperation. In fisheries management, the classical goals of MSY and MEY do not offer much consideration of social concerns, such as distribution of income and social equity. When social concerns are included in the negotiations (e.g. over TACs and effort), they are most often used to defend status quo, that is, to maintain large quotas in order to protect employment in the fishing areas. Certain management measures may encompass distributional concerns by implication, but the distribution of catch and income is increasingly left to the market. While this has been a reasonably successful recipe in developed countries, the same model is doomed to failure in many developing countries, with few or no alternatives to fishing. Hence there is a need for a different approach, stressing the importance of fishing as a safety net for the poor. Closing the fisheries (as has been done in most modern fishing nations) may hit the poorest hardest. In conservation, marine protected areas (MPAs), their distribution, classification and implications in terms of protection, are particularly relevant. There are problems of unequal distribution of costs and income, in terms of the tourist industry cashing in on conservation while poor fishers often are left to pay the costs. Hence, there is a need for compensation and alternative jobs. While MPAs are often “sold” as fisheries management tools, the biological evidence is at best shaky and the social and economic evidence is largely lacking. Consequently, it would be better to accept the fact that an MPA (sensu IUCN) aims primarily at conservation; that it is a tool and not an end in itself; and that fisheries management may have other and better means of securing sustainable stocks, including fishing reserves and other types of closed areas. Both systems of governance require consultation with different stakeholders and various models of co-management and need to decide who are the stakeholders and when and how should they be involved in the process. At present, fisheries and conservation are linked to different institutional set-ups, and closer cooperation may imply a need for a new institutional set-up (e.g. for integrated ocean management). A close look at the recent development of marine spatial planning (MSP) indicates that it could be used as a common framework for both fisheries management and conservation. Zoning will imply tradeoffs between utilization and conservation, which in democratic societies have to be made through the political process.

In conclusion, the chapter stresses the need to make social considerations in fisheries and conservation governance simple. The bottom line is always that regulations that are not (to some degree) considered legitimate, will be undermined by poaching and non-compliance – a fact that constantly remind administrators and politicians of the social or equity aspects of fisheries management. While equal distribution of rights and quotas is clearly utopian, disregarding distributional concerns will normally backfire, especially where it is explicitly stated that the marine resources belongs to the nation, that is, all inhabitants, with the state acting as their trustee.

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**Spatial dimension of fisheries and conservation governance**

Richard Kenchington, Ole Vestergaard, and Serge M. Garcia

Authorities for governing marine activities are based on spatial boundaries defined by points on the 2-dimensional surface of sea or land. This can present challenges for spatial governance in taking account of cross-boundary ecological processes, human activities and impacts conveyed by the mobile fluid third dimension of the water column. Various area-based measures are used in fishery management but the primary approach, reflected in the UNCLOS and general practice, is management of target stocks with the objective of maintaining stocks at a biomass level that could produce the maximum sustainable yield. Marine protected areas are a primary measure for conservation of biodiversity endorsed by the World Summit for Sustainable Development (WSSD. 2002) with a target coverage of 10% adopted of the world oceans by the 2010 COP of the Convention on Biological Diversity (Aichi targets). The issue of reserve MPAs that require permanent closure of areas to fishing has been a matter of ongoing tension between the two streams of governance of fisheries resources and biodiversity conservation.

The interaction of space-based approaches and other instruments for management of fishery resources and biological diversity is given careful consideration. The chapter addresses this in the context of their broader interactions with other human uses and impacts affecting marine space. The focus is on the roles and interactions of space-based frameworks for sustainable use of fisheries resources and for biodiversity protection through MPAs...

This is addressed through consideration of fisheries and biodiversity conservation sectorial management responsibilities within multiple-use integrated management. Spatial planning and zoning as well as ecosystem (or ecosystem-based) approaches to the management of human uses and their impacts on natural resources, stocks and biological diversity are discussed.

The chapter concludes that the issues facing governance of fisheries and biodiversity conservation have substantial common ground and are similarly confronted by issues arising from an increasing range of human uses and impacts which require an effective integrated approach to spatial and temporal management.

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**Legal dimension of marine living resources at the global level**

Alf Hakon Hoel and David VanderZwaag

The chapter describes the global legal frameworks for the management and conservation of living marine resources, addressing legally binding as well as non-binding instruments. The chapter takes the evolution of ocean law as point of departure and accounts for the 1982 Law of the Sea Convention (LOSC), its main concepts and provisions, in relation to living marine resources (LMRs). A number of instruments that are directly related to the LOSC, such as the 1995 UN Fish Stocks Agreement, are then discussed before proceeding to an account of other global instruments of relevance to the management and conservation of LMRs, such as the 1992 Convention on Biological Diversity. Before a concluding discussion of possible future developments, bodies and processes under the LOSC, related agreements as well as other global instruments are discussed, including processes under the UN General Assembly, state party meetings, and judicial institutions. The chapter concludes, inter alia, that over the last three decades, a comprehensive global regime has been built for the governance of LMRs. In the evolution of LMRs governance at the global level, new principles for conservation and management have
emerged, such as the precautionary approach and the ecosystem approach to fisheries. The major challenge in international governance

**Scientific foundation: towards integration**

Jake Rice, Simon Jennings and Anthony Charles

The chapter begins with consideration of what it means for governance institutions to be “science-based”, and why that is a goal for both fisheries management and biodiversity conservation. This consideration highlights that “science-based” must be interpreted in the context of the scientific capacities of the areas, and that traditional knowledge has a legitimate place in that science basis for governance. The chapter focuses on the reality that governance decisions apply to complex and imperfectly understood systems. Systems. Complexity is present in the ecological, social, and economic systems individually, and also characterizes the interactions among those systems – the “socio-ecological system. The systems are imperfectly known because the information needed for science-based decision-making about these complex systems is always incomplete and uncertain, and the dynamics of these systems are usually non-linear with tipping points that are hard to quantify. The chapter will review the main science components of each of the three constituents of the socio-ecological systems; the ecological component comprising single species population dynamics, species-habitat relationships and ecological community dynamics, the socio-economic system comprising macro- and micro-economics and the behavioural sciences of individuals, groups, and communities. It will discuss how each of those main components of the science foundations of fisheries management and conservation of biodiversity is linked to governance. This discussion will address two levels of linkage. The first level how decision-making may be affected by and take account of the complexities and uncertainties of the science foundations. The second level is how the uncertain science foundations for decision-making in both fisheries management can be challenged on a number of grounds; the values of the communities affected by the two governance streams, the different scales at which important parts of ecological and human systems commonly function, and the more fundamental challenges of post-normal science. A conclusion of this review is that although the governance streams of fisheries management and biodiversity conservation attach similar value to the science foundations for decision-making, there are important differences in how the science should be used, and how the uncertainties should be taken into account in decision-making. The chapter concludes with a review of new initiatives in both governance streams that may have potential to bring greater coherence to the contribution of science, including traditional knowledge, to decision-making. These initiatives feature more fully integrated assessments, greater attention to scale of processes, and risk based approaches to the use of science, taking into account the risk profiles of different constituencies. It notes that many of these features also characterize approaches to management for artisanal fisheries developed in FAO and of ICAD much earlier on.

**PART III: GLOBAL GOVERNANCE**

**Governance for fisheries and conservation at global level**

Lori Ridgeway and Michael Shewchuk

The chapter introduces both the institutional dimension to fisheries and biodiversity governance as well as evolution in agenda-setting at the global scale, as context to chapters focusing on regional and national perspectives and implementation. Global institutions offer strong potential for enhancing transparency and integration of issues, perspectives and strengths of multiple players, mobilizing those able to make the highest political commitments to change and mobilizing large funding mechanisms. But impediments also exist to the realization of this potential: ‘access’ of various communities of interest to relevant bodies/processes and culture, working methods and competing agendas of diverse organizations. The chapter examines critical success factors for effective global governance processes, focusing especially on institutional behaviour and legitimacy, and how innovations are made in global institutions. Organizations examined will include various UN-related bodies and agencies and their processes, other global intergovernmental organizations (e.g., CBD, IUCN), capacity-building processes (e.g., GEF, World Bank), and some key and closely-related NGO processes. The chapter is supported by a detailed Annex of organizations and the communities of interest and issues they engage. The chapter is intended to provide transparency to readers on the diversity of institutions, bodies and processes and their institutional strengths and roles, where fisheries-related issues are addressed, how the agenda and critical success factors have evolved over time, and an understanding of whether there is a tendency to integration or fragmentation of issues and players. The chapter provides observations on issues best dealt with at the global level and how fisheries issues can be leveraged into global processes more coherently to ensure maximum buy-in in aid of willing implementation of reform at the national and regional level.

**Conservation and risk of extinction**

Colman O’Criodain, Pamela Mace, Jake Rice and Glenn Sant

The chapter first presents the broad governance roots of Species at Risk (SAR) issues from the biodiversity conservation and fisheries “streams”. For the conservation biology governance stream, the IUCN Red list quantitative criteria in the early 1990s were a key development. Independently and in parallel over the same period the fisheries governance stream was developing quantitative criteria for fisheries management reference points. However, prior to the IUCN Congress in 1996, the fisheries stream was focused more on fisheries management targets and limits and in general did not take the work done on SAR into account, whereas the global biodiversity stream working on SAR issues had not yet focused on how fisheries management targets and limits might be related to risk of extinction criteria. That changed with the 1996 IUCN RedList, which included Atlantic Cod and some other commercially exploited fish. Arguments at the IUCN Congress led to a series of workshops including science experts from both streams; a model followed soon afterwards at CITES and FAO, as similar arguments about the robustness of the decline criterion and the conservation reliability of fisheries reference points emerged in CITES.
meetings. The central part of the chapter reviews the scientific issues under debate between experts from the two streams, regarding the assessment of risk of extinction. It follows the developments in science expert groups sponsored by either fisheries or biodiversity conservation bodies – or co-sponsored by both. Although the scientific foundations on which both streams operate have been strengthened by the work in those groups, there has been little real convergence in perspectives. The chapter does not debate the validity (or lack of validity) of either fisheries reference points or the IUCN criteria. Rather it develops a clear exposition of what the different views are, their scientific and institutional roots, and what they mean for effective governance. The differences in views are presented as challenges that governance institutions and processes must address. The latter part of the chapter explores the impacts on each governance stream when faced with outputs lacking full credibility to the other, and what options exist for improving ocean governance on this important topic. It also considers why over 15 years of effort has resulted in very limited harmony and integration of the two streams.

Fisheries and conservation in the high seas: EBSAs and VMEs

Jake Rice, Jihyun Lee and Merete Tandstad

This chapter focuses specifically on the collaborations and interactions of the work undertaken to identify and protect ecologically special areas in the high seas. It traces the parallel lines pursued by the fisheries and biodiversity governance communities, from a common start in the 2002 UNGA Plan of Implementation. Each community had a different Resolution, and a parallel development of criterion adopted by CBD for identification of ecologically and biologically significant areas (EBSAs), and by FAO for parallel development the criteria adopted by CBD for identification of vulnerable marine ecosystems (VMEs). Some experts to develop their science bases for actions; and developed separate policy frameworks for actions by Parties and States. Some experts participated in both processes, but each expert developed its own documentation as a basis for planning and action. Despite their parallel development the criteria adopted by CBD for identification of ecologically and biologically significant areas (EBSAs), and by FAO for identification of vulnerable marine ecosystems (VMEs) are functionally nearly equivalent (except for fisheries-related criteria ??). Moreover, implementation of the separate policy frameworks for EBSAs and VMEs requires the same information on marine ecosystems and their uses and the results of either process can inform planning and management of the other stream. Both FAO, primarily through RFMOs, and CBD, primarily through regional workshops hosted by a country in the region, are progressing with identification of areas which meet their criteria. Both FAO and CBD have sponsored reviews of progress using their respective criteria, to identify impediments to progress, and areas where additional guidance for implementation is needed. The results of these reviews will be summarized, again pointing out that many of the needs are the same in both streams. The chapter will review the one joint initiative by an RFMO and a Regional Seas organization in the same area to simultaneously identify EBSAs and VMEs, with regard to lessons learned about the opportunities for cooperative work on the science-based assessments of areas against the criteria. However the chapter will also summarize how the needs of the fisheries and the biodiversity conservation agencies were sufficiently different that different follow-up actions were based on the common science results. The chapter will conclude with a discussion of how greater cooperative initiatives between Regional Seas organizations and RFMOs can be made operational, for the benefit of both types of governance agencies and for the marine ecosystems and their sustainable uses. In the end, however, guidance from the UNGA itself may be needed before the two governance streams can bring greater integration to their actions for appropriate protection of the areas, once they are identified.

Interactions among fisheries and environmental actors in small island developing states

Patrick McConney, Robert Pomeroy and Zaidy Khan

Fisheries in small island developing states (SIDS) are governed and operated in ways that may either complement, or compete and conflict with, other coastal and marine uses and users. Interactions between harvest and postharvest fisheries activities on the one hand, and environmental NGOs on the other hand, impact especially upon small-scale fisheries. Environmental actors, interests and issues may either enable or constrain fisheries in SIDS. Such interactions are of increasing importance as ecosystem approaches, climate change, depletion of major fish stocks and sustainable development occupy global centre stage. Yet these complex interactions are poorly documented and understood. This chapter examines the concepts, processes, outcomes and outlooks related to interactions among fisheries and environmental actors in SIDS of the Caribbean and Pacific regions. We highlight the synergies, solutions, challenges, conflicts and constraints experienced. From a governance perspective we suggest how such interactions may enhance the benefits derived mainly from small-scale fisheries in SIDS.

PART IV: REGIONAL GOVERNANCE

Regional governance for fisheries and conservation

Robin Warner, Kristina Gjerde and David Freestone

The regional level of governance is critical for effective implementation of fisheries conservation and management as well as conservation of marine biodiversity. This is true for marine areas within national jurisdiction and in relation to transboundary interactions but even more so for marine areas beyond national jurisdiction (ABNJ). There is considerable diversity and varying rates of progress among RFMOs in incorporating environmental protection principles into their conservation and management regimes. Equally the network of RSOs does not cover all oceanic regions and reflects varying levels of progress towards comprehensive strategies for and implementation of conservation of biodiversity in respective areas of responsibility. This chapter will provide a description of the legal and institutional framework for regional oceans governance focusing on the salient features of Regional Fishery Management Organizations (RFMOs) and Regional Seas Organisations (RSOs). It will analyse their convergences and divergences in relation to conservation and management of fisheries and conservation of marine biodiversity. It will examine the efforts of RFMOs and RSOs to collaborate between themselves and with other global regional and national level bodies and the catalysts and obstacles to such collaboration. Finally it will identify gaps in regional oceans governance fisheries and conservation of marine biodiversity and potential pathways to improved collaboration.
Regional governance: the case of NEAFC and OSPAR

Kjartan Hoydal, David Johnson and Alf Hakon Hoel

The governance situation in the North-East Atlantic is unique in that coastal states have been cooperating in ocean matters (including on scientific matters through the International Council for the Exploration of the Sea, ICES) for over 100 years. For fisheries management, its basis was laid in the 1930s and formalised in the NEAFC 1959 Convention. The prevention of marine pollution was formalized in two conventions: the 1972 Oslo Convention (dealing with dumping from ships and aircraft) and the 1974 Paris Convention (dealing with land-based sources of marine pollution). These conventions have been further developed and updated. A new NEAFC convention entered into force in 1982 and was updated in 2004 and 2006 addressing the dispute settlement and strengthening the mandate for long-term conservation of the marine ecosystems in which the resources occur. In 1992, the Paris Convention was updated and unified with the London Convention, forming the OSPAR Convention to be implemented by the OSPAR Commission. Later, a new Annex V was added to the Convention authorizing OSPAR to adopt programmes and measures to protect the marine environment from all human activities. The fisheries and environmental conventions cover the same geographical area and the same Contracting Parties with the notable exceptions of the Russian Federation (in NEAFC) and Switzerland (in OSPAR). Furthermore, both Commissions receive scientific advice from ICES. The cooperation between NEAFC and OSPAR has developed since 2008, under a Memorandum of Understanding (MoU), affecting their core activities towards improved conservation of biodiversity and fishery resources and more rational and sustainable practices in the different sectorial uses of the North-East Atlantic. Based on very much the same scientific data, the two Commissions have particularly pursued the

venue of setting aside parts of the Area Beyond National Jurisdiction (ABNJ) of the North-East Atlantic as areas closed to fisheries (NEAFC since 2004) and established as MPAs (OSPAR in 2010). Both sets of proposals were reviewed by ICES. In what is called the “Madeira process”, the two organisations have further discussed new developments and logistical issues related to control and enforcement of area-based management measures.

The two Commissions present “cultural” differences and different set-ups and the chapter shows how, to some extent, these have been overcome. The latest example is the joint initiative of NEAFC and OSPAR to co-host with the CBD and co-chair the first Regional Workshop on Ecologically or Biologically Significant Areas (EBSAs) in September 2011. The Workshop was successful and consensus was reached, proposing for further consideration as EBSAs six extensive areas and four smaller international bird areas covering in total more than 3 million km². The differences in the operations of the two Commissions are acknowledged as well as the positive signs of regional cooperation. Recognizing the long-standing cooperation in marine science through ICES, the chapter discusses whether the NEAFC-OSPAR collaboration provides a global model for joint regional marine governance and management. There seems to be a consensus in the North-East Atlantic that a network of cooperation agreements and MoUs between existing organisations, with a mandate to regulate human activities in the ocean, will in the short and medium term offer the best opportunity to achieve the correct balance between optimum utilisation and conservation in the North-East Atlantic.

Regional governance: the Mediterranean cradle

François Simard, Matthew Camilleri and Larbi Sbai

In the Mediterranean, both a fisheries management organization (the General Fisheries Commission for the Mediterranean, GFCM) and an environmental organization (the Barcelona Convention and Mediterranean Action Plan, MAP), have been established respectively in 1949 and 1975. Although the member states are, almost, the same, limited cooperation exists between these organizations until the beginning of the 21st century. Recently the development of cooperation and coordination arrangements have been promoted, taking into account the emerging ecosystem approach and an increasing need for an integrated approach in marine spatial planning which focuses on the management of human activities.

This chapter describes the two organizations, their history, structure, governance and internal processes, comparing them, emphasizing differences and discussing the potentialities for integrating governance. It also describes other Mediterranean international mechanisms dealing inter alia with cetaceans’ protection (ACCOBAMS) and scientific cooperation (CIESM). It highlights and discusses the cooperation potentials of these organisations through the example of MPAs identification and declaration.

While, recently, the Mediterranean organizations have set up bilateral MoUs aiming at coordination and cooperation, those mechanisms are still weak. The chapter discusses the implementation difficulties arising from the fact that different ministries represent the same states in each organization. The role of the European Union in terms of integration of the regional organisation is important since it has internal processes of coordination between its members, but the levels of involvement, commitment, capacity and expectations of the latter often differ from those of non-European Mediterranean states. The Barcelona Process, recently changed into the Union for the Mediterranean, is an important tool for cooperation but it does not play much role in term of marine management and is still far from meeting the expectations raised by political declarations.

Civil society organisations play an important role in the Mediterranean processes. The professional and recreational fisheries organisations are observers at the GFCM. The main environmental organisations (IUCN, WWF, Oceana, Greenpeace, MedPAN) are active at the GFCM, MAP and ACCOBAMS. IUCN, by is specific membership composed of States and NGOs, is having a specific role of technical advisor, especially for MAP and ACCOBAMS. Along with other NGOs, IUCN influences GFCM decisions by providing best available science and technical proposals to the GFCM Sub-Committee on Marine Environment and Ecosystems (SCMEE).

One example is the cooperation developed between the IUCN Centre for Mediterranean Cooperation, the WWF Mediterranean Programme Office and GFCM which have worked together on the conservation of the deep sea since 2003. This venture led to the adoption of a number of measures by the GFCM: namely:

1. The prohibition of the use of towed dredges and trawl nets fisheries at depths beyond 1000 m of depth (RECM-GFCM/29/2005/1)
3. The obligation of Members to call the attention of the appropriate authorities in order to protect these areas from the impact of any other activity jeopardizing the conservation of the features that characterize these particular habitats (RECM-GFCM/30/2006/3).
In 2009, the area enclosing the submarine canyons of the Gulf of Lions south of Marseille (France) was added to this list of fisheries restricted areas (FRAs). These decisions represent an important milestone in the field of marine conservation and fisheries management and their effectiveness would be reinforced if taken up formally also by MAP. In this respect, IUCN and its partners are working closely with GFCM and MAP for strengthening these conservation measures. In parallel, the Regional Activity Centre for Specially Protected Areas (RAC-SPA) is conducting a large-scale project (in collaboration with ACCOBAMS, GFCM, IUCN, and several others partners) for identification of important areas in the high seas or deep areas, expected to lead to the designation of Specially Protected Areas of Mediterranean Importance (SPAMIs) that would include the GFCM FRAs.

The ideal integrated governance is still way ahead but good progress is recently achieved thanks to the necessity to implement the ecosystem approach principles. More formal cooperation mechanisms and integration at national level are needed as next steps forward.

CCAMLR and the Antarctic conservation: the leader to follow?
Denzil G. M. Miller and Natacha M. Slicer (2006). This chapter reappraises these authors’ “international best practice standing” for CCAMLR, using specific developments to highlight the organization’s advances, challenges and shortcomings. Not only is CCAMLR perceived as a leader in international best practice, it is seen as delivering ecosystem and precautionary approaches essential for strong fisheries and ecosystems outcomes. It also provides a 'model' for other RFMOs in respect to the structures, processes and innovative thinking required to operationalize ecosystem-directed management approaches and concepts.

Ecosystem approach to fisheries in the Benguela LME area
Johann Augustyn, Samantha Petersen, Lynne Shannon and Hashali Hamukuaya

The Benguela Current region has been a laboratory for experimentation with the implementation of EAF. Earlier work has allowed the development of systems and structures required to translate the best available science into management advice, thereby facilitating the implementation of an EAF in a context specific manner. The fisheries institutions in the countries have begun to implement EAF management with varying degrees of success. A number of new initiatives are allowing EAF implementation and tracking with some success and the underlying science is well integrated with international initiatives. Under the Benguela Current Commission a portfolio of EAF projects is underway to investigate and advise on key issues that need to be understood in order to adopt a more holistic and integrated approach to fisheries management and conservation in the region. There are also several examples of institutional developments, mostly in South Africa, that are leading the way to allow a more comprehensive and integrated approach. There have been some notable successes, especially with respect to scientific collaboration, management and capacity building; some serious shortcomings, in terms of funding, institutional capabilities and structure, political will and ability to regulate fisheries; but there are also some opportunities to make further progress through greater political support, policy development, institutional changes and the constructive role of the BCC.

Governance of conservation and fishery resources in the context of the European Union
Serge Beslier and Bernard Dobrenko

The governance of the European Union (EU) rests on a context-dependent system of delegation of sovereignty by its members and on an original decision-making process. The Common Fishery Policy (CFP) is one of the most integrated policies of the EU and its environmental policy is one of its most important. The CFP is an exclusive competence of the Union for the conservation of marine biological resources. The environmental policy is a shared competence with its Member States. The interaction between these two policies is more transparent and allows Non-Governmental Organisations (NGOs) to be very active, particularly with the EP and the Commission. The legal framework of the CFP is made by EU regulations. The tools used by the CFP for stocks management are quite conventional, except for the relative stability which determines the fishing rights of each Member State. The implementation, the monitoring and the control of fishing activities remains under the responsibility of Member States. It is the weakest part of the CFP. According to the Treaty, the CFP has to integrate the requirements of environmental protection, in particular with a view to promoting sustainable development. The CFP foresees to apply the ecosystem approach to fishery management.

The environmental policy of the EU uses different tools. The European programs are policy drivers for the EU policies as well as for the Member States. They are a good way of testing ideas before formalizing them into legal texts, mainly under the form of directives which define the results to be achieved but let to the Members States the choice of form and methods. Some of those directives have a direct impact on fishery activities. International agreements are also used by the EU to make progress for the purpose of improving the legal framework of the environment. The environment is, by definition, not limited by political borders and it corresponds to the logic of European integration which
Convergence of ecosystem conservation with fisheries management in the Sulu-Sulawesi Large Marine Ecoregion, apex of the Coral Triangle
Annadel S. Cabanban, Porfirio M. Alino, Evangeline F. B. Miclat and Sandra R. Arcamo

Demonstrations of the convergence of marine conservation and fisheries management are few and, in this chapter, we report the convergence of these two streams of management in the Sulu-Sulawesi Large Marine Ecosystem (SS LME), at the apex of the so-named Coral Triangle area. The SS LME is bounded by Indonesia, Malaysia, and Philippines and the governments of these countries have ratified in 2006 the Sulu-Sulawesi Marine Ecoregion Conservation Plan (ECP). The ECP is consistent with the principles of the Ecosystem Approach and the Comprehensive Action Plan for Sustainable Fisheries, one of three action plans to execute the SSME ECP has adopted the Ecosystem Approach to Fisheries management (EAF) in meeting governmental commitments to the Code of Conduct for Responsible Fisheries (FAO). The Global Environment Facility is supporting the implementation of the Action Plan of Sub-committee on Sustainable Fisheries by providing a grant on the Sulu-Celebes Sea Sustainable Fisheries Management Project (GEF 3254) and a grant for a replicate demonstration site (for best management of small pelagic fisheries) in the Philippines under the Coastal and Marine Resources Management in the Coral Triangle: Southeast Asia (through the Asian Development Bank). The evolution of this convergence at the regional scale has evolved from the knowledge and experiences gained from national activities in Indonesia, Malaysia, and the Philippines. Implementation of the regional ECP is at local scales within each country and the challenges and opportunities will be presented and discussed in through several cases. The agencies with the mandates for environment and fisheries management in Indonesia, Malaysia, and Philippines remain sectoral institutions but governmental policies provide enabling conditions for multi-sectoral cooperation and the integration of fisheries in the management of coastal ecosystems and resources. These developments in the Sulu-Sulawesi LME have evolved as early as the late 1970s, from local, sub-regional, and to regional scales and with the participation of the governmental agencies on environment and fisheries, universities, and the assistance of bilateral and multilateral donors and, to date, are ahead among the seascapes within the Coral Triangle area. Lessons learned from these experiences can be shared with the resource managers of other LMEs in the coral triangle area. The SSME, for these and other reasons, was identified as a priority seacape by the Coral Triangle Initiative for Coral Reefs, Fisheries, and Livelihoods (CTI-CRFL, launched by Indonesia, Malaysia, Philippines and 3 Pacific Countries in 2009). The Sulu-Celebes Sea Project for Sustainable Fisheries Management (GEF/UNDP/UNOPS), formulated under the SSME Sub-committee Action Plan, and national projects in coastal resources management contribute to the achievement of Ecosystem Approach to Fisheries Management fully Applied (Goal 2 of the CTI-CRFL). The SCS SFM Project is an opportunity for the implementation of the EAF in the SSME and for its replication in the Coral Triangle area however challenges remain and options identified to overcome these will be highlighted.

PART V: NATIONAL GOVERNANCE

The use of national frameworks for sustainable development of marine fisheries and conservation, ecosystem-based management and integrated ocean management
Keith Sainsbury, Peter Gullestad and Jake Rice

International agreements, conventions and guidelines help frame the overall intentions and expectations of Sustainable Development, but it is at the national level that these must be made practical and operational while balancing the interests of the nation and its citizens. It is through the national frameworks that the high-level intention of sustainable fisheries in a healthy ecosystem is turned into decisions that affect people as well as the environment. In the last 1-2 decades many countries have been actively developing the governance arrangements, policy and technical methods to practically deliver on these intentions. Here we summarise the approaches taken in three developed countries with strong central governments and significant capacity in marine science and management; Australia, Canada and Norway. There are several powerful similarities and variations in the methods and processes that these three countries have used, and while the journey is far from complete the combined experience is very encouraging. There are clear approaches and methods that can be used to develop national frameworks for the sustainable development and management of fisheries and conservation. These are described and discussed. Importantly, there are several useful approaches and methods that can be applied without significant new knowledge, so that a practical start can be made without waiting for new resources or results. There are several outstanding but quite well defined issues that are still being grappled with, and prominent among them is greater clarity and agreement about targets, limits and acceptable impacts across fishery management and environmental management. Fully integrated regional management remains a recognised but more distant goal.

Community stewardship and sustainable small-scale fisheries within the broader context
Patrick Christie, Nygiel Armada and Lisa Campbell

Coastal communities and fishers generally face increasingly difficult circumstances as global economic forces and environmental change erode the possibility for sustainability. The implications for marine biodiversity, food security and livelihoods are considerable, especially in the global South. In response, coalitions consisting of varying constituencies— including fisher organizations, coastal community lead-
ers, scientists, activists and policy makers are responding with novel governance, stewardship and management approaches, relating both to fisheries and to marine and coastal conservation. This chapter examines these approaches, the involvement of coastal communities in local and higher level decision making (including co-management), successes and failures from various locations, and the key attributes of planning and supporting local-level stewardship and sustainable small-scale fisheries. Examples are drawn from the Caribbean and Philippines illustrate that co-management approaches, which engage resource users and governments in joint decision making, are essential to defining workable policies which are sustained in the long-term. The national and international policy context will be considered as drivers defining the opportunities and constraints for community stewardship. The interactions between international conservation and fisheries manage-
ment policies can be complex and contradictory, but progress on both fronts is possible as demonstrated by innovative programs in some contexts such as the Philippines. After more than a decade of effort, both coral reef and fisheries management is being improved with a suite of tools including effort restrictions, marine protected areas and, now, marine spatial planning. The decentralized governance context of the Philippines allows for innovative and flexible management approaches. Progress is made through the effective use of social and natural scientific data, local knowledge, participatory planning processes, and systematic institutional capacity development. The management systems are grounded in both practical experience and empirically validated best practices. Social survey results will highlight the importance of participatory and transparent decision making, among other processes, as essential means for building community support for stewardship.

The role of capacity building for improving governance of fisheries and conservation of marine ecosystems
Juan-Carlos Seijo and Silvia Salas

This chapter identifies current training and capacity building to facilitate the process of shifting from fisheries governance of targeted single species stock assessment and management to an ecosystem approach to fisheries governance considering ecological, economic and social interdependencies. It also identifies and discusses linkages of capacity building and research for governance and conservation of ecosystems hosting fisheries, in relevant topic areas such as: (i) capacity building for understanding and implementing the ecosystem approach to fisheries management, (ii) educational efforts for increasing awareness of potential impacts of alternative fishing technologies on ecosystem health and for adopting species and habitat friendly fishing methods and gears, (iii) Modelling and analysis of vulnerable sedentary and low mobility marine species and the ecosystem in which they live, (iv) capacity building for using quantitative and qualitative criteria and methods to aid decision-making in an environment of risk and uncertainty, and (v) research questions to identify possible changes in ecosystem performance and species distribution patterns resulting from climate change.

Making space for small-scale fishing communities: the use of spatial management measures in fisheries management and marine conservation
Merle Sowman; Ramya Rajagopalan; Chandrika Sharma and Jackie Sunde

This chapter focuses on the impacts of conservation and conventional fisheries management approaches and practices especially the implementation of marine protected areas (MPAs) and other spatially-based management measures on the socio-economic and customary rights of coastal fishing communities. Despite a plethora of international instruments that increasingly recognise the need to respect the rights of local fisher communities and require adoption of good governance principles in fisheries and conservation management, research in India and South Africa suggests that coastal communities continue to be impacted by fisheries management and conservation decisions and practices. In particular, the current target-driven approach to expand areas under marine protection without active involvement of resource users is exacerbating the vulnerability of these resource dependent communities, alienating them from mainstream conservation efforts and promoting “illegal” fishing activities.

Lessons from the implementation of spatially-based management measures in South Africa and India reveal that despite the adoption of a host of international instruments relevant to ‘people and protected areas’, identification, planning and management of protected areas are characterised by state-driven, science-based and top-down decision making. Inability of fishers to access food especially in times of crises, loss of livelihoods, alienation of fishers from their environment, loss of cultural identity, erosion of customary governance systems, loss of local and indigenous knowledge in management decisions, as well as lack of consideration of the impact of non-fishery related activities and the limited attention given to the development of supplemental livelihoods, are all impacts associated with current management approaches and practices. Recognition that current approaches are failing to achieve sustainability (in the broadest sense) outcomes, have prompted the introduction of a few initiatives that are adopting a more holistic, integrated and participatory approach to resource governance.

Difficulties experienced in translating progressive policy principles and provisions into management practices and decisions are largely due to different values and goals of stakeholders, institutional blockages, sectoral agendas, the challenge of reconciling global imperatives with local realities, poor governance and the challenge of balancing human rights and environmental principles. The positive contribution that communities can make to conservation and fisheries management objectives as co-managers of resources is highlighted through examples. The paper concludes that long term conservation and fisheries management goals will only be achieved if appropriate governance mechanisms are put in place that recognise small-scale fishing communities’ human rights, integrate social and cultural dimensions in planning and management and involve local fisher communities in decision-making processes.

Governance and conservation in small-scale fisheries
Jeppe Kolding, Christophe Bené and Marteen Bavinck

This chapter presents an introduction to small-scale fisheries and its governance, focusing on the interface with conservation objectives. It first of all highlights the characteristics, developments and trends of small-scale fisheries, and their undervalued importance for a still
growing number of fisher households in the world, many of whom have few employment alternatives. It then discusses the ways in which small-scale fisheries are currently governed, emphasizing the role of fisher institutions and 'self-governance' initiatives, and the way these mesh, complement or conflict with outside governance efforts (by government, NGOs, or the private sector). The next section discusses their perceptions and diagnosis, and the role of 'local knowledge' and 'scientific knowledge' with regard to small-scale fisheries, emphasizing that both have deficiencies as well as benefits. The general lack of quantitative information prescribes indicator-based assessment, and the advantages and pitfalls of these are discussed. The final section describes current approaches to the governance of small-scale fisheries and their effects.

The role of fishers' organizations in conservation
Mitsutaku Makino, Annadel Cabanban and Svein Jentoft

Using the cases from 3 different climatic areas (Tropical: Philippine, Temperate: Japan, and Arctic: Norway), the role of fishers’ organizations (FOs) in fisheries and marine conservation governance are discussed, and lessons and challenges for the better governance are summarized based on the social and ecological differences between the three areas. Fishers’ organizations can play a vital role in monitoring ecosystem changes and save governance costs. Right-based management strategies are important, but the nature of rights (e.g., rights on area/ rights on quota, etc.) will define the incentive structure of the FOs. The appropriate institution for better governance differs depending on the types of services to be governed, the objectives of governance, and the social position of FOs as well as their relationship with other stakeholders in the society.

The role of the courts in the integration between fisheries management and conservation of marine biodiversity
Peter Shelley and Thomas Van Rijn

This chapter will look at how two legal systems operate with respect to the integration of fisheries management and marine biodiversity protection: the United States and the European Union. The U.S. judicial system is extremely powerful. "It is emphatically the province and duty of the Judicial Department to say what the law is" (Marbury v. Madison, 5 U.S. 137, 177 (1803)). However, it is also a limited system, requiring a "case or controversy" to call its power forth; policy disputes are not welcome in the absence of an "injured" party. While a federal court has an inherent capacity to create a federal common law, the courts focus in practice almost entirely on interpreting statutory law: Congress writes the laws; the President implements the law; and the judiciary declares what the law is.

This separation of American governmental power into three components necessarily and directly affects the ability of U.S. courts to integrate fisheries management and more broadly drawn marine biodiversity goals. Where Congress has not acted to approach marine biodiversity protection: the United States and the European Union. The U.S. federal courts have had "extra-territorial" effects through the enforcement of laws designed to close U.S. markets to foreign fish and wildlife that has been taken in contravention of local law. The author will argue that U.S. federal courts are a good venue for achieving a number of the desired national policy end-points for marine resource protection but need additional authority to do so from Congress.

The European Union judicial system consists of two layers: the courts of the Member States of the Union and the General Court and Court of Justice of the European Union. The two layers coincide with the different roles of the Member States and the European Union in fisheries management. The section will analyze the relationship between both layers. The important role of the Union's judiciary in ensuring the application of the legislation set by the Union will be emphasized.

PART VI: CONCLUSIONS AND OUTLOOK

Fisheries and conservation: synthesis and outlook
Anthony Charles; Serge M. Garcia and Jake Rice

This chapter will be prepared at the end of the chapters review process. It will summarize the main points developed in the chapters, connect them in a coherent analysis and reasoning, and indicate the main avenues for an effective way forward, towards a more "integrated" governance of fisheries and biodiversity conservation.