



COMMISSION
FIFTEENTH REGULAR SESSION
Honolulu, Hawaii, USA
10 – 14 December 2018

**A GLOBAL ANALYSIS OF ALLOCATION IN TRANSBOUNDARY
TUNA FISHERIES MANAGEMENT**

WCPFC15-2018-OP10
6 December 2018

Submission by Australian National Centre for Ocean Resources and Security (ANCORS)

A global analysis of allocation in transboundary tuna fisheries management

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Abstract

Resource allocation is a fundamental and challenging component of common pool resource governance, particularly transboundary fisheries. While ample research explores how to sustainably manage common pool resources, far less investigates how those resources are allocated amongst users, and the implications for fairness and equity. Here, we highlight the growing importance of resource allocation in transboundary fisheries governance, comparing the approaches of the five tuna-related Regional Fisheries Management Organizations (tRFMOs). We consider recent trends in natural resource allocation, connecting these trends with the progress of each tRFMO in allocation discourse, policymaking, and implementation. While all but one tRFMO has defined resources for allocation, and outlined official principles to guide that allocation, all fall short of structured application of these principles toward the equitable assignment of fish resources. Most tRFMOs rely heavily on historical catch or effort in determining allocations, with other principles (e.g. development status, resource dependence) rarely determining dedicated rights. In most cases, the current system of direct annual negotiations reduces certainty, undermines trust, and reduces transparency, counteracting many benefits asserted by rights-based fisheries management. We discuss the allocation policies currently under negotiation in two tRFMOs, and the challenges and opportunities each face in implementing comprehensive, principle-driven frameworks for allocating valuable fish resources. Creating systems for implementing currently defined principles into the act of allocation remains a major opportunity for tRFMOs.



Introduction

Resource allocation is a fundamental and challenging component of common pool resource (CPR) governance (1, 2). In the last three decades, a robust and well-developed literature has considered the conditions under which enduring institutions are able to avert the tragedy of the commons, and sustainably manage CPRs without compromising the resource base (1, 3-5). However, substantially less research has explored the ways in which those resources are allocated amongst users, and the implications for fairness and equity (2, 6, 7). Focusing on tuna, early iterations of tuna-related RFMO (tRFMO) conventions emphasized the need for “maintaining the populations of these fishes at a level which will permit maximum sustained catches year after year” (8) or to “permit the maximum sustainable catch” (9); but these early conventions make no mention of allocating fish resources to particular actors. However, despite early emphasis on maintaining healthy fish stocks, tRFMOs are increasingly engaging in allocation processes, considering not only issues of sustainability, but also resource distribution (10-13). In engaging in allocation processes, tRFMOs join the ranks of multiple natural resource regimes (e.g. shared watercourses, climate) that have included equity and distributional concerns within their mandate (14-18). This engagement with notions of allocation¹ has implications not only for fish stocks and socio-economic fisheries systems, but also normative implications for the future of how we think about rights and access to resource benefits.

Next Generation Allocation: Current challenges and opportunities for tRFMOs

In comparing the allocation histories and trajectories of the five tuna-related RFMOs, several trends emerge. First, all tRFMOs with the exception of IOTC have bounded and defined at least some resources for allocation. In some cases, these resources represent the entirety of the tRFMO’s mandate (e.g. CCSBT), and in other cases, fish resources intended for allocation are a relatively small proportion of the total stocks managed by the tRFMO (e.g. ICCAT). Furthermore, how tRFMOs define these resources is dramatically different based on the specific stocks, areas, and fishing methods they encompass, contributing to the complexity—and in some cases feasibility—of allocation approaches. Notably, when comparing tRFMOs in terms of the *value* of allocated resources (price times volume), for both ICCAT and IATTC, catches of the highest priced stocks tend to be allocated more frequently than catches of lower priced stocks. In contrast, WCPFC has a slightly higher percentage of total catch allocated than ex-vessel value, a result likely attributable to the distinct geopolitics of western and central Pacific fisheries. WCPFC has not established allocations for the highest priced species (Pacific bluefin), as it represents only a small fraction of the total WCPO catch (0.3% in 2016) and nearly all the catch is taken by one state in its own waters (Japan) (19, 20). However, a large percentage of the highest volume but lowest priced species (purse seine-caught skipjack) is allocated, with most opportunities allocated to the fishing zone, rather than the flag state (21).

¹ Here we consider allocation to be the assignment of national opportunities to participate in the fishery. These opportunities may be allocated to individual states or groups of states, and represent a right of extraction, though this is often temporarily defined and may not establish precedent for future resource claims.

This management model is not currently replicated by any other RFMO, tuna or otherwise, and has led to a situation where a greater proportion of the ex-vessel value of the resource is shared by the state from which it is extracted (22). A second trend is that allocation discourse has played a growing part in the functions of tRFMO management, and all tRFMOs except IOTC have outlined official principles to guide the allocation of these defined resources. Some of these principles are universal, outlined in the convention, and intended to represent the views of the tRFMO regarding who should receive resource rights (e.g. WCPFC, ICCAT). Others are limited in scope, and specific to individual subsets of resources intended for allocation (e.g. IATTC).

While these two trends represent substantial accomplishments, all tRFMOs fall short of applying these principles in a structured way toward the equitable allocation of fish resources. To date, most tRFMOs appear to have relied heavily on the principle of historical catch or effort in determining allocations (23, 24); and while other principles such as development status or resource dependence have influenced allocation, it has primarily been in the form of management exemptions rather than dedicated resource rights (e.g., (21, 25). Further, these allocations are determined by direct negotiation between parties, and are thus more shaped by the relative power and positions of individual states and actors rather than the principles selected by each organization. One tRFMO (CCSBT) has a quasi-formalized allocation, however what is formalized within this framework is not the *application* of ranked principles to the allocation of TAC or TAE, but simply the catch percentages allocated amongst users. While this may increase states' certainty regarding their resource rights from year to year, it is still not possible to assess the relative weight or importance given to each allocation principle.

By defining and bounding fish resources and identifying resource users, tRFMOs have moved closer to goals of sustainability; and in identifying allocation principles, they have expressed the intention of distributing those resources based on some form of perceived equity. However, as none have yet created systems for implementing those principles into the act of allocation, this remains a major opportunity for tRFMOs. The current systems of setting yearly (or triannual) allocations based on negotiations between parties reduces certainty for individual states, frequently undermines trust, and ultimately reduces transparency and accountability in allocating rights (23, 26). Despite these obstacles, both WCPFC and IOTC are currently undergoing major allocation negotiations with implications for fish resource rights for years to come. These negotiations are led by coalitions of small island developing states (SIDS) and less developed coastal states, which currently drive efforts toward allocation in both organizations. In both tRFMOs, these coalitions perceive that a standardized allocation system may be the most promising means of ensuring long-term resource rights and implementing those rights based on notions of equity and distributional justice. The outcomes of these allocation processes may remain uncertain for many more years, however one trend that is clear is that sub-regional bodies and coalitions of like-minded developing states are having a growing influence on the operations of tuna RFMOs (27).

Conclusion

Allocation is a critical component of management, as it ensures that access to scarce fish resources is granted to users based on the priorities and values outlined by the organization. Allocation of resources can provide developing states the certainty needed to attract investment in catching fleets and onshore facilities to pursue economic, social and cultural objectives. Currently, even though most tRFMOs have defined these priorities and values, they have not systematized their application to resource allocation. As such, the actual assignment of resource rights is shaped more by the power, influence, and occasionally coercion of individual states, rather than the outlined principles. These assignments are not just important for the year or years to which they apply; these relative allocations have proven in many cases to be profoundly valuable, consistently tradeable, and enduring. They've also been proven to shape how resource allocation is perceived and approached for the future, influencing strategies of states that use historical allocations to both constrain and inflate future resource claims. The significant consequences of these allocations underline, all the more, the importance of a principled approach to allocation.

Systematizing the application of allocation principles is not only essential to increase certainty, transparency, and sustainability, but also to shape emerging norms of resource rights and access with purpose and intent. Moving from the current system of opaque allocations based on political negotiations to a systematic and transparent system rooted in the tRFMOs' principles is not an easy task. We suggest one potential means of gaining traction may be to shift conversations within tRFMOs away from states' allocative rights and toward weighting of principles that, as we have demonstrated, have already been identified for most tRFMOs (28). While this would still represent a strongly political negotiation, by reframing around principles, it may be possible to advance toward an allocative *process* without becoming mired in the debates around allocative *outcomes*. Although no tRFMOs have currently instituted this kind of systematic allocative framework, there are important precedents for establishing these processes at sub-regional levels (29). The process of creating international rules for resource allocation has always been, and will necessarily be slow. However, there is currently substantial momentum—and unique opportunities—to establish these frameworks for several global tuna stocks, shifting the ways we think about rights and access to fish both now and in the future.

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