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Advancing tuna catch allocation negotiations: an analysis of sovereign rights and fisheries access arrangements

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Regional fisheries management organisations (RFMOs) determine conservation measures for transboundary fisheries resources. They are also a forum for collective action toward the management of marine resources. One of the most complex and controversial aspects of this process is the allocation of catches between RFMO members. There are a variety of processes that can be used for catch allocation. In recent years, there has been a trend in some RFMOs towards establishing a system of criteria or indicators to determine the volume or percentage of catch that should be allocated to each RFMO member. Establishing such a system is challenging and the position of countries negotiating at RFMOs is also shaped by fisheries access arrangements. The debate on allocation has been ongoing at the Indian Ocean Tuna Commission for more than a decade, where one key point of disagreement is the treatment of historical catch taken in the waters of a coastal State. On the one hand, coastal states claim that catches historically taken in their exclusive economic zones (EEZ) should be attributed to them based on their sovereign rights over living resources. On the other, some fishing countries from outside the region claim catch history based on fishing conducted in the coastal State's waters pursuant to access agreements. We analysed UNCLOS articles, publicly available fisheries access agreements, and national legislation to unpack the linkage between fisheries access arrangements and catch allocation discussions, and we also explored examples from other regions and RFMOs. We point out that the sovereign rights of coastal states over their EEZ provide a strong basis for allocation negotiations. In the absence of specific agreements to the contrary, any catch history that arises from foreign vessels fishing inside the EEZ should be attributed to the coastal State. We also argue that it is time for members of RFMOs—and especially of the Indian Ocean Tuna Commission—to move beyond the historical catch debate. They need to resolve their differences or consider other ways to allocate participatory rights in shared fisheries.

The United Nations Convention on the Law of the Sea (UNCLOS) requires coastal States to promote the optimum utilisation of living resources in the exclusive economic zone (EEZ). This can entail providing access to a part of the allowable catch to other states (Article 62 UNCLOS), creating the possibility for fisheries access arrangements (FAAs). FAAs constitute an arrangement by which coastal States provide fisheries access to their EEZ for

countries seeking opportunities for their fishing vessels beyond their own waters in return for a fee or other form of compensation. They started in 1959 and took off in the 1970s with the customary law acceptance of EEZs, several years before UNCLOS was adopted¹. Commonly, FAAs involve developing coastal States, which may not have the capacity to harvest all the living resources of the EEZ themselves. The counterparties of these

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arrangements are often developed States, known as ‘distant water fishing nations’ (DWFNs), whose land territory is located in other geographic regions. There is considerable literature on fisheries access arrangements, particularly with respect to their conclusion and operationalisation in developing coastal States^{2,3}. This paper brings attention to another aspect of FAAs, which has been less discussed in the literature: the question of how FAAs impact the negotiation of catch allocations in regional fisheries management organisations (RFMOs), specifically in tuna RFMOs.

Governments are increasingly urged to adopt conservation and management measures at RFMOs, through harvest control rules, catch limits, and allocations. This is because overfishing continues to increase in various oceanic regions⁴, and there is a global struggle to achieve the UN Sustainable Development Goal 14.4 on increasing the proportion of fish stocks exploited sustainably^{5,6}. However, adopting conservation and management measures is a complicated process. The negotiations of such measures can drag on over years, often imbued with (geo)political entanglements^{7,8}. The effectiveness of RFMOs also depends on achieving a fragile consensus among member states and on how much members want to adopt strict measures⁹. This is particularly true at the Indian Ocean Tuna Commission (IOTC), where negotiations to establish a system for catch allocations have been underway for 13 years. While all parties agree in principle on the need to establish catch allocations for the IOTC, the structure, and criteria of the system by which such allocations would be made are still under negotiation. The parallel involvement of RFMO members in FAAs can shape catch allocation negotiations in important—and sometimes unfortunate—ways¹⁰. In two of the meetings of the IOTC that the authors observed in 2022, DWFNs fishing in coastal State waters through FAAs raised the potential link between FAAs and a future catch allocation system. Parties then spent some time questioning and debating the rights established by FAAs.

In this perspective paper we examine the role of FAAs in catch allocation discussions at RFMOs, illustrated by ongoing negotiations at the IOTC. We build on the following question asked (but not answered) by Haas et al.¹¹: in situations where fishing has been conducted by vessels of a flag State in the waters of a coastal State under an FAA, how should the catch history be recorded by an RFMO? Should it be considered to form part of the historical catch of the flag State by whose vessels it was harvested? Or should it be attributed to the coastal State in whose EEZ (and pursuant to whose sovereign rights) it was taken? In the case of the Indian Ocean, a flag State is most commonly a DWFN whose land territory is located outside the region. We tackle these questions in three stages. First, we examine the function of FAAs and how they relate to catch allocation discussions at the IOTC. Second, through an analysis of UNCLOS articles, publicly available FAAs, and national legislation, we show how historical catch taken in coastal State waters under FAAs does not imply historical rights for DWFNs to catch allocations in the context of RFMOs. Third, we present the implications of prioritising historical catch in the adoption of allocation criteria and highlight some alternative ways of allocating catch, drawn from the experience of other RFMOs.

We used a variety of qualitative research methods, including legal review, policy analysis, and participant observation. A starting point was a detailed analysis of UNCLOS provisions focusing on articles linked to FAAs, sovereign rights, and management in Part V, which establishes the legal regime for EEZs. We examined publicly available FAAs, namely, European Union Sustainable Fisheries Partnership Agreements (SFPAs) for tuna and the Pacific Islands Multilateral Tuna Treaty with the United States (FFA-US MLTT). At the time of writing this paper (2023), the EU had 12 active SFPAs in place, with Cape Verde, Cook Islands, Côte d’Ivoire, Gabon, Guinea-Bissau, Madagascar, Mauritania, Mauritius, São Tomé and Príncipe, Senegal, Seychelles, and the Gambia¹² (a 13th SFA, renewed in late 2023 with Kiribati, was not part of this analysis). All of these agreements target tunas and associated species, often exclusively. Two of these SFPAs also include hake as a target species (i.e., Senegal and Gambia), and two also target small pelagic species such as sardinillas (i.e., Guinea-Bissau and Mauritania). The FFA-US MLTT negotiations (i.e., coordinated by the

Pacific Islands Forum Fisheries Agency (FFA). The treaty provides US fishing vessels with multi-year, multilateral access to fish for tuna in the EEZs of the FFA members. Across all of these agreements, we examined the duration clauses, including the renewal of agreements, the mention of sovereign rights (and sovereignty), and the conditions of access. Further, using the FAOLEX database (see Supplementary material 1), we analysed national legislation relating to fisheries management for the 12 coastal countries with SFPAs. We searched for terms relating to ‘catch allocations’ (or ‘allocation des opportunités de pêche’ in French or ‘repartição/atribuição das capturas’ in Portuguese) and ‘quotas’ to see if they were mentioned in the context of FAAs.

Results were complemented by the authors’ participation as observers in allocation discussions at RFMO negotiations, including 6 IOTC Commission and Allocation Committee meetings held since 2018 and about 15 annual Commission meetings of the Western and Central Pacific Fisheries Commission (WCPFC) held since 2004. During these meetings, the authors took personal notes of verbal interventions by coastal States and DWFNs in plenary discussions. These observations are flagged as such within the paper.

This perspective is timely because catch allocation has been under negotiation at the IOTC for 13 years and is still at a standstill. Discussions of allocation of catch and/or effort are also ongoing in other tuna RFMOs, including the WCPFC, the International Commission for the Conservation of Atlantic Tunas, and the Commission for the Conservation of Southern Bluefin Tuna. The paper can help parties and observers have clarity on the implications of FAAs for catch allocations.

What are fisheries access arrangements?

Fisheries access arrangements (FAAs) provide rights for vessels of a flag State (often a distant water fishing nation) to access the living marine resources in the waters of a coastal State in exchange for a fee and other modalities determined by arrangement with the coastal state. They fall within the framework for the optimal utilisation of living marine resources established in Article 62(2) of UNCLOS, which provides that “[w]here the coastal State does not have the capacity to harvest the entire allowable catch, it shall, through agreements or other arrangements and pursuant to the terms, conditions, laws, and regulations referred to in paragraph 4, give other States access to the surplus of the allowable catch”¹³. A 2022 FAO mapping of FAAs¹ divides them into a continuum: from FAAs that grant fisheries access in return for a financial payment (access fees); to FAAs that grant access at a reduced fee in return for the vessels registering locally (‘domestication’) and using local goods and services; and through to FAAs where an investor commits to land the fish domestically and make onshore investment in processing in return for discounted access fees.

FAAs can be government-to-government, which can be bilateral (the approach used by the EU) or multilateral (used by the USA with the Pacific Islands); industry association-to-government (typically used by East Asian fleets); or company-to-government through direct licensing. Even if governments play a central role in negotiating and subsidising FAAs, ultimately, the industries and firms that own distant water fleets are the key agents benefitting from FAAs¹⁴. These FAAs provide a time-limited opportunity for vessels to engage in fishing activity in a coastal state’s EEZ, which can be measured by catch (a specified volume of fish caught) or effort (a specified number of vessels over a unit of time, such as a day). In practice, FAAs are usually some combination of catch and effort for a specific period (from 6 months to a year), even if the overarching arrangement spans multiple years like SFPAs, for example. Various methods are used to calculate the financial component, and FAAs are normally regulated by a complex set of requirements relating to fisheries management, monitoring, control and surveillance, and enforcement.

The practice of negotiating and agreeing to FAAs (also known as ‘concluding FAAs’) is common practice in industrial fisheries. Powerful fishing states and entities such as China, the EU (mainly on behalf of France and Spain), Japan, Russia, South Korea, Taiwan, and the USA are involved in FAAs in all oceanic regions of the world¹. In the Indian Ocean, there are active FAAs between coastal states and distant water fleets from China, the

EU, Japan, South Korea, and Taiwan¹. In the Pacific Ocean, FAAs are concluded between Pacific Island states and similar actors as in the Indian Ocean, with the addition of the USA. Nationally, FAAs play a key role in foreign aid flows, including through revenues and development aid, as well as local employment through domestication policies^{1,3,15,16}. FAAs have long been criticised for their lack of fairness in terms of the distribution of benefits and the limited transparency in their conclusion and operations^{17–19}. Recent criticisms include the negative impacts they have on the sustainability of fisheries resources and potentially on food security in coastal areas^{20,21}. However, FAAs continue to be concluded as they represent an important source of revenue and investment for coastal countries, and a central component in the business model of DWFN fleets^{1,22}.

Unpacking the link between fisheries access arrangements (FAAs), historical rights, and catch allocation negotiations

FAAs generate historical catch, interpreted as historical rights by DWFNs

While not explicitly mentioned in UNCLOS, the concept of catch history, or ‘historical catch’ – meaning the quantity of fish caught in a given area – has become one of the key indicators used to inform fisheries allocation in RFMOs, both in relation to the high seas and areas under national jurisdictions^{23,24}. In the Indian Ocean, fishing undertaken in coastal State EEZs by DWFNs’ vessels pursuant to FAAs has created an important quantity of historical catch. These DWFNs, such as the EU, Japan, or South Korea have fished in the region under FAAs since the 1980s²⁵ and some without FAAs in the 1970s²⁶. Over the course of 40 years of fishing in the Indian Ocean, the EU fleet and EU-owned vessels have fished around three million tons of yellowfin, skipjack, and bigeye tuna in the waters of coastal states²⁷.

The question of how the historical catch taken by these foreign vessels within coastal State EEZs should be attributed is the most contentious element of the ongoing catch allocation negotiations in the IOTC. The attribution concerns both Contracting Parties and Cooperating Non-Contracting Parties of IOTC (also referred to as CPCs). Up until 2020, the negotiations revolved around two opposing proposals: one from the coastal states and one from DWFNs. Since the start of discussions, coastal States’ proposals have advocated for the same provision, that: “all historical catches taken within an area under the national jurisdiction of a CPC shall be attributed solely to the CPC with jurisdiction over that area, regardless of the flag of the vessels that took such catches”²⁸. In contrast, DWFNs (mainly led by the EU and supported by Korea) have proposed that 90% of historical catch be attributed based on the flag of the vessel by which it was taken²⁹. DWFNs continue to advocate for the position that flag States hold rights on the basis of historical catch taken in the EEZ³⁰. The contradiction between the positions held by coastal states and DWFNs has generated heated debates amongst IOTC parties on the nature and extent of rights over these resources³¹.

For example, coastal states have compared themselves to owners of orchards from which DWFNs have been allowed to pick the apples (pers. Obs at 2018 IOTC commission meeting). This argument implies that at no point does the party coming to pick the apple own the land, the trees, and the apples (or the ecosystem, the fishery, and the fish stock). Until the apple is picked (or the fish is caught), the holder of the access right only owns the *opportunity* to pick the apple (extract the fish), and even then, only on a *temporary and time-limited* basis (as per all FAAs¹. The apple picker (fishing operator) only owns the apple (individual fish) once it has been removed—it is then their property as raw material. If the operator fails to pick the apple (extract the fish) during the time allocated by the arrangement, then it remains with the owner of the orchard (fishery). At no point is a claim made by the operator—in practice or in law—to the *reproductive potential over time* of the ecosystem, the orchard/fishery, or even individual apples/fish and all of their future outputs.

Since 2020, the IOTC Technical Committee on Allocation Criteria has tried to advance the negotiations by focusing the discussion on one draft text

that combines various elements of previously submitted proposals. This draft text continues to be negotiated, with a range of criteria and allocation weightings currently under consideration³². Evolving versions of the draft text have included alternative texts on historical catch. One version suggests that a proportion of the catch history is attributed to the coastal State (and the remainder attributed to the flag State of the vessel). Another version suggests that the catch history of the EEZ should be entirely attributed to the coastal state³⁰. The 2023 draft text includes a catch-based allocation clause under which historical catch within an EEZ is attributed to the coastal state having jurisdiction but with a proportion/percentage of such historical catch still to be negotiated³³.

Under UNCLOS, fisheries access arrangements do not attribute historical rights to DWFNs

Article 62 of UNCLOS makes clear that other States may be given access to fish in the EEZ under FAAs. However, this is firmly within the framework of the coastal State’s sovereign rights over living resources in the EEZ and the conservation of resources as established by Article 61. The concept of “surplus” is central to this framework. A “surplus” corresponds to the fraction of the “total allowable catch” that the coastal State does not have the capacity to harvest itself, which would thus remain in the water if not harvested by vessels of another State³⁴. Article 62 provides that where a [coastal state decides that a] surplus exists, the coastal State must allow other States to access it, “through agreements or other arrangements”. The granting of access to fish for the surplus in the EEZ of a coastal State does not automatically result in any permanent transfer of historical or future rights to the vessel’s flag State. The role of the flag State (which, in the case of the Indian Ocean is most commonly a DWFN) is to exercise responsibility for the actions of its vessels and require them to comply with the laws and regulations of the coastal State while operating in that State’s EEZ under the FAA.

Moreover, Article 56 of UNCLOS provides coastal States with sovereign rights to explore, exploit, conserve, and manage the living resources of their EEZs¹³. In addition, Article 61 requires the coastal State to ensure the proper conservation and management of the whole population of a species, as well as associated and dependent species, in a way that avoids over-exploitation. Therefore, the rights (and concomitant obligations) to conserve and manage fishery resources in the EEZ, and to make decisions about how and by whom they are harvested remain perpetually with the coastal State. This could not be achieved if rights over a particular portion of a stock were transferred to foreign flag States as a result of granting access to the surplus under FAAs. Furthermore, even if the surplus is established by a coastal state, such surplus would vary in different years. The recipient of the access is also likely to vary over time, which further refutes the argument that if access is granted under an FAA, rights (in the form of future allocations) are transferred permanently to a flag State. Finally, UNCLOS does not provide any guidance on how long FAAs may last. The coastal States may enter into FAAs as long as the stock is in good health and not subject to over-exploitation and a surplus exists. In this respect, the concept of surplus is explicitly referenced in five out of the 12 EU SFPAs analysed in this paper, and in the EU Common Fisheries Policy. Yet, SFPAs have also been concluded in the Indian Ocean in situations where surpluses have not been established. Moreover, two of the three targeted stocks under SFPAs are currently overfished^{35,36}, which strongly calls into question whether any surplus still exists in the region.

In the context of highly migratory species such as those under the jurisdiction of IOTC, consideration also has to be given to the obligation of cooperation established in Articles 64 and 118 of UNCLOS. These articles require both coastal and flag States to cooperate through RFMOs to ensure the conservation and sustainable use of straddling and highly migratory stocks throughout the region. In this respect, one potential argument is that where a flag State is authorised to fish for a certain species under an RFMO and then receives permission to fish that allocation in the coastal State’s EEZ under an FAA, the resultant catch should be attributed to the flag State for the purposes of future allocation. However, there is nothing in UNCLOS

that contemplates this. The duty to cooperate through RFMOs applies alongside—and does not override—the coastal State’s extensive rights and obligations with respect to living marine resources in the EEZ discussed above. If catch taken in a coastal State’s EEZ is to be attributed to the flag State, this should be the subject of express agreement between the coastal State and the flag State as part of the FAA, even if that catch forms part of an RFMO allocation.

Fisheries access arrangements do not establish the historical rights of DWFNs

The analysis of the 12 EU SFPAs and the national legislation of their respective parties shows that SFPAs do not even mention the possibility of historical rights. SFPAs grant a right of access to EU distant water fishing vessels for a specific duration (Fig. 1). Even though the SFPAs are multi-year, reference to catch volumes is made on the basis of annual time periods and can vary from one SFPA protocol to the next. Further, references to catch volumes do not accumulate through the years of the protocol. None of the SFPAs transfer ongoing rights over the resources fished (Fig. 2) (See supplementary material 2 for a detailed table).

Our analysis of the EU SFPAs does not reveal any reference to the transfer of enduring rights from the coastal State to the flag State, nor any reference to the right to a yearly catch volume to be transferred to the next year. None of the EU SFPAs mentions future catch history. Permission to fish in the EEZ is limited to a specified period and only grants access, not ongoing rights. The 12 EU SFPAs apply to a certain timeframe ranging from 3 years (e.g., Cook Islands) to 6 years (e.g., Gabon, Seychelles) (Fig. 1). Although these arrangements are limited to a set number of years, they are mostly tacitly renewed for the same period through implementing protocols. For example, the SFPAs with Cabo Verde, Côte d’Ivoire, and Gabon have been tacitly renewed since 2007. The exception to these renewals is the SFPA signed with Madagascar in 2023, which does not mention any tacit renewal. Moreover, coastal states can also change the duration of renewing protocols despite the terms of the main SFPA. This has been the case for Guinea-Bissau, Mauritius Sao Tomé, and Principe, for which the duration of

the protocols is longer than the main SPFA. For Cook Islands, Gabon, and Mauritania, the duration of the protocols is shorter compared to the main SFPA. This shows that coastal States retain a level of negotiation despite the mention of tacit renewals in SFPAs. It further reinforces the fundamental principle of time-limited access. In all of these examples, EU operators only have a right to access an opportunity to fish as provided by the coastal State.

SFPAs provide detailed conditions of access. These can be a ‘limit of reference’ in the case of tuna (i.e., a target catch that can be surpassed for financial compensation). They often (but not always) include quotas in the case of other target species (i.e., a maximum tonnage of fish). They also indicate a certain number of vessels, certain species to be harvested, and specific terms and conditions. The sovereign rights of coastal states are always recognised within the preamble of each SFPA. The latest evolution in this area is in the 2023 SFPA with Madagascar, which mentions in the principles of the agreement that “the Parties shall act with due respect for sovereignty and sovereign rights within the meaning of Article 56 of UNCLOS”³⁷. This means that this SFPA asserts the coastal state’s sovereign rights to explore, exploit, conserve, and manage the tuna resources. All fishing activity under SFPAs falls under the jurisdiction of the coastal state, and EU parties have to comply with the coastal state’s laws and regulations. For example, common phrasing in SFPAs includes “The Union vessels operating in [host country] fishery areas shall comply with the applicable laws and regulations of the [host country]”³⁸. Fishing vessels are required to report data, including catches within the EEZ, to the coastal state, supporting the coastal state’s sovereign rights over the resources³⁹.

Regarding the FFA-US MLTT, which is the tuna treaty between Pacific islands and the United States, it first entered into force in 1988. It was initially limited to 5 years, and then subsequently was renewed twice for ten years each¹. Since 2013, the negotiations for the agreement have experienced some turbulence, due to a variety of reasons, but have continued to renew, with the most recent renewal signed in November 2022 for ten years. As such, just like SFPAs, the MLTT is a negotiated process where access to the opportunity to fish is agreed upon by the coastal state on a time-limited basis. Similar concepts on access and compliance with national laws are also

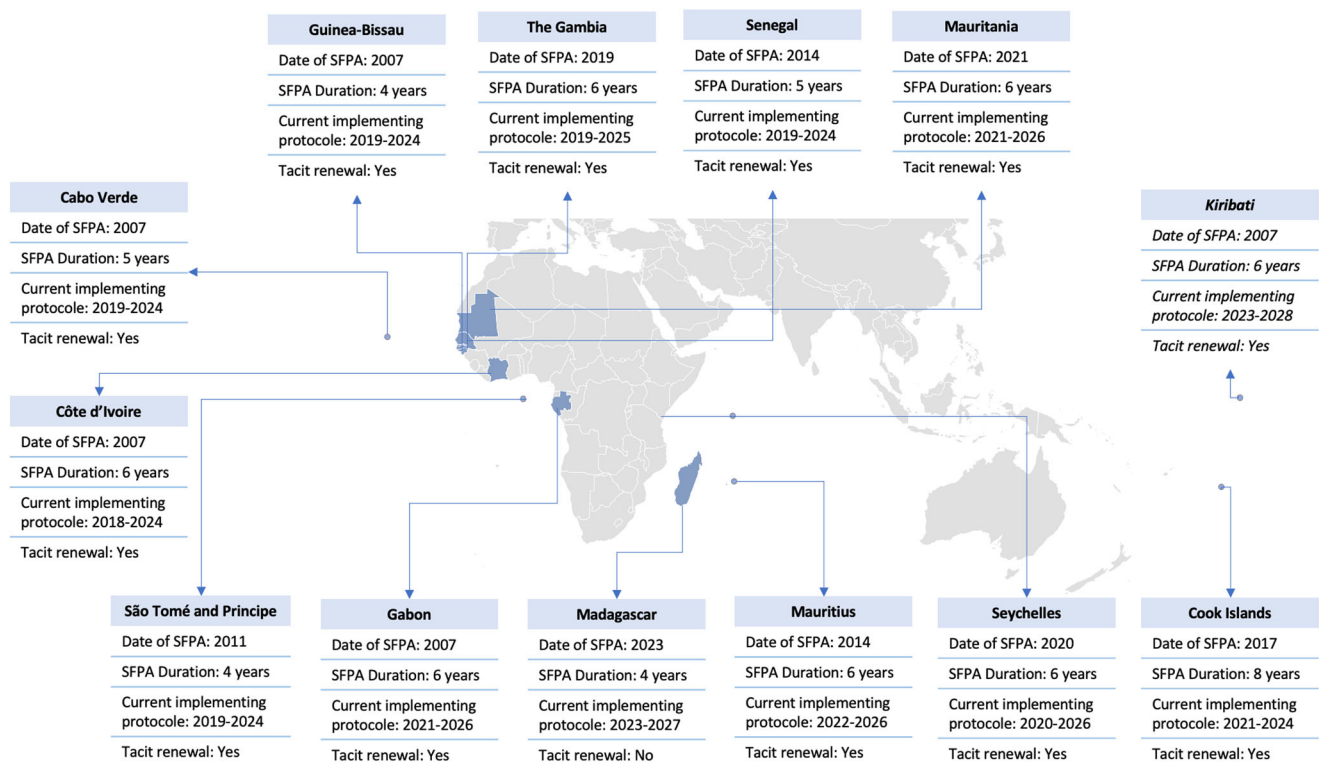
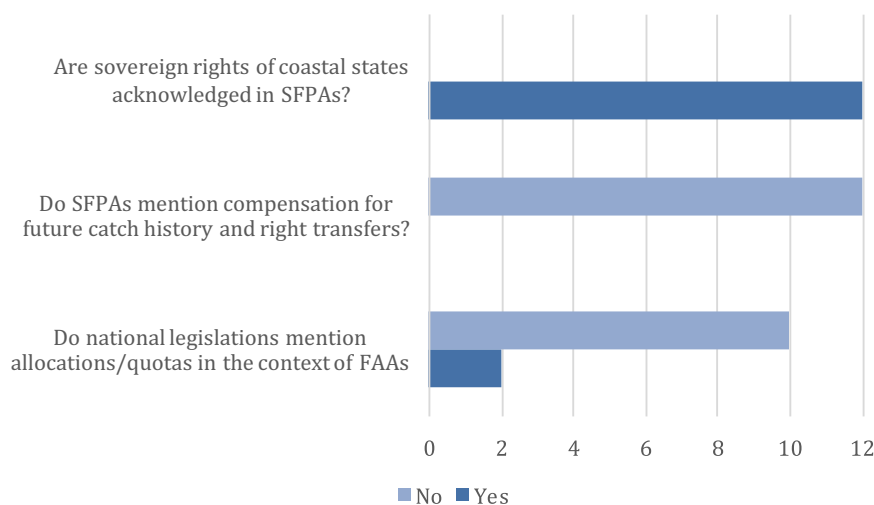


Fig. 1 | The duration of the 12 EU SFPAs analysed and the 13th SFPA with Kiribati renewed end of 2023. Each SFPA is described with their signing date, their duration, the current active protocol and the mention if the SFPA is tacitly renewed.

Fig. 2 | Mentions of sovereignty, catch history, and allocations in the 12 SFPAs and national legislations. Two questions explore if sovereign rights or future catch history are mentioned in SFPAs. The third question investigates if national legislations make reference to allocations and quotas under fishing access arrangements.



reflected in the treaty. The MLTT allows temporary access to the EEZ of coastal states. All licensed vessels must comply with the national law of each Pacific Island state. Generally, it has been emphasised that nothing in this treaty shall “prejudice the rights, jurisdiction, and duties of parties under international law” (Art. 4.12)⁴⁰.

Furthermore, our review of national legislation did not reveal any potential allocation or quota associated with the implementation of FAAs. We did find mention in Cabo Verde legislation regulating fishing activities of the need to respect established quotas when negotiating access agreements. Further, the Cook Islands Marine Resources Act⁴¹ mentions allocations under FAAs. The terms are that “Fishery allocations under access agreements shall – [...] (c) be made taking into account, inter alia, the following considerations as may be appropriate: (i) past and present fishing patterns and practices; [...] and (iv) whether such allocations would advance the development of the fishing industry in the Cook Islands”. Here while the Cook Islands recognise historical rights, allocation is still in the context of national management. Other countries, such as Madagascar or Senegal mention the possibility of establishing quotas, but these are not linked to FAAs.

The implications of attributing historical catch

Attributing historical catches correctly in the context of RFMO allocation processes is critically important, especially for the IOTC, as it has implications for both the management of resources and FAAs concluded in the region.

Attributing historical catch mainly to DWFNs would exacerbate existing power imbalances

The proposal of DWFNs to attribute historical catch caught within EEZs mainly to flag States is not contemplated in UNCLOS nor in national legislation. It is also not addressed in FAAs negotiated to facilitate foreign fishing access to EEZs. This approach would undermine the exercise of sovereign rights by coastal states over the resources of the EEZs⁴² and produce a ‘double inequity’ of outcomes: first, the surplus catch has been historically underpriced through comparatively low access fees; second, this same catch from inside a coastal State’s EEZ is then proposed as historical evidence for future quota for the foreign flag State. As also argued by Haas et al.¹¹, this entrenches and perpetuates historical inequalities. It would reinforce the economic power of DWFNs such as the EU and its distant water fleet which has since the early 1980s invested hundreds of millions in its fleet and fishing operation in the Indian Ocean, including through subsidies^{25,43}.

If adopted at the IOTC, this model of attributing catch from a coastal State’s EEZ to a foreign flag would radically alter the operation of tuna fisheries and the implementation of FAAs in the Indian Ocean. It would dramatically increase the power of the historically dominant EU, and

effectively enshrine them with ownership—or at least control—of the region’s tuna fisheries. For example, some Indian Ocean coastal developing States have not historically had the capital, infrastructure or access to technology to develop their own domestic fleets, but have an aspiration to do so. In the meantime, they have sold access to foreign fleets who have maintained their foreign ownership and provided little or no support for domestic development aspirations. Attributing catch history to these foreign flag States for the purposes of allocation would then further undermine future access benefits for the coastal State, as it would limit any fishing within their EEZ to foreign vessels from DWFNs such as the EU that held sufficient quotas. This would also increase the negotiating power of DWFNs in access fee negotiations as competition would be limited to DWFNs with quotas. It would also further undermine domestic development aspirations because domestic fishing firms based in the developing coastal state would now be required to purchase quota from foreign DWFNs before they could legally fish within their coastal waters. In effect, this model would result in developing coastal States being highly dependent on DWFNs to access the resources of their own EEZs. It would effectively destroy the sovereign rights granted by the UNCLOS to coastal States.

It would also establish a vastly different framework from what is in place in tuna RFMOs in other oceans. In the Pacific or in the Atlantic, other principles related to citizenship and equity or the state of the fish stock are prioritised over historical catch²³. If the IOTC adopts a system of catch allocation that mostly attributes historical catch from EEZs to DWFNs, it will undermine the efforts of coastal states in applying other criteria in other oceanic regions, such as in the Pacific and Atlantic oceans. Globally, it will also go against existing calls for ocean equity. The high-level panel of States for a sustainable ocean economy, for example, calls for an equitable distribution of benefits and redistribution of wealth from ocean activities⁴⁴. It would also erode progress towards achieving the UN Sustainable Development Goals, particularly SDG 14.7 which aims to increase benefits from fisheries for small island developing States⁴⁵.

Leaving aside the EU, other DWFNs are less strident in their positions in the IOTC negotiations, and China even actively supports the coastal States in the defence of their sovereign rights (pers. obs at 2022 Allocation meeting of the IOTC). It should also be noted that a different position is taken by the EU and other IOTC DWFNs at the WCPFC. There, DWFNs have agreed to allocate catch in the Western and Central Pacific Ocean purse-seine fishery in a way that attributes historical EEZ catch to the relevant coastal states. This agreement was renewed in December 2022 when the EU and all other DWFNs agreed to a process to negotiate high seas purse-seine allocations in 2023, recognising the limits implemented by coastal States for their EEZs⁴⁶. Proposals by DWFNs on allocation in the high seas included allocating 50% of the high seas quota to developing States that had not previously received catch limits of their own⁴⁷.

Attributing historical catch to coastal states could empower coastal states

If the IOTC attributed historical EEZ catch to the coastal State and historical high seas catch to the flag State, this would be consistent with the jurisdictional framework established in UNCLOS and with existing practice in other regions. It would also minimise any impact on the future operation of the region's tuna fisheries, or on future FAAs. In this scenario, DWFNs would continue to negotiate FAAs for access to an EEZ, fishing against the quota allocated to the coastal State (and producing a catch history attributable to that coastal State) when inside an EEZ. When fishing on the high seas, all IOTC parties (whether coastal States or DWFNs) would be limited to their flag State quota. This would also be consistent with Article 62(4) of the UNCLOS, which provides that coastal States can establish quotas of catch for fishing in the EEZ. Such quota must be complied with by nationals of other States fishing in the zone. In this sense, establishing quotas and allocations at the RFMO level could help coastal States establish quotas at the national level. This, in turn, might introduce catch limits to future FAAs and would need to be considered when concluding FAAs.

Fishery and area management can be another way to allocate historical catch

The WCPFC provides interesting lessons learned for the IOTC and other RFMOs on how to attribute catch based on the area differentiation of EEZs and the high sea. Members of the WCPFC are managing conservation limits and allocation frameworks differently, notably by fishery (large-scale purse-seine vs. longline) and between areas (EEZ and high seas). Since 2009, the fishery for Skipjack/ tuna targeted by large-scale purse-seine vessels has been largely managed through the WCPFC Tropical Tuna Measures^{48,49}. These successive measures have managed purse-seine fishing days rather than purse-seine target species catch. They effectively allocate purse-seine effort in EEZs according to the coastal state having jurisdiction over that EEZ and not according to the flag State fishing the tuna. Flag-based effort limits for purse seiners are only in place for high seas areas, and only for fleets from developed States to avoid a disproportionate burden of conservation on developing States that have not previously had the opportunity to develop their domestic fleets. While the Tropical Tuna measures refer to "limits" rather than allocation, the EEZ limits are implemented as lasting allocations. The high seas limits, however, are considered temporary and are open to change according to decisions of the Commission⁵⁰. The biggest share of the EEZ purse-seine allocation belongs to a consortium of near-equatorial small island developing States called the Parties to the Nauru Agreement (PNA). These are the Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands, and Tuvalu, and have since been joined by one Territory: Tokelau. The PNA+Tokelau consortium has its internal formula for allocating its WCPFC share through the Palau Arrangement Purse-seine Vessel Day Scheme (VDS)^{51,52}. It is also responsible for keeping the annual sum of its allocation usage by all parties within the annual subregional limit agreed upon at WCPFC.

Under the Vessel Day Scheme, the PNA coastal States can establish, limit, allocate, and trade purse-seine fishing opportunities within and between their EEZs. DWFNs can conclude bilateral FAAs with PNA coastal States for fishing in their EEZs within the limit of the fishing opportunities allocated under the scheme. The scheme and its integrated multilateral Fisheries Information Management System provide the foundation for more effectively valorising access to PNA EEZs, but in ways that are up to individual national Parties to decide. Under this management scheme, FAAs between DWFNs and coastal states have to comply with the national laws implementing it in countries' national waters. This requirement led to a break-off in FAAs between PNA Parties and the EU. The latter did not recognise the national implementation of the scheme until recently. The Cook Islands, which is in the region but not part of the PNA, remained the only Pacific Island nation with an active FAA with the EU. However, the EU's approach to this appears to be changing. The latest protocol of the Cook Islands' FAA fully acknowledges the implementation of the scheme. It has been the same in the recently concluded SPPA protocol between PNA

member Kiribati and the EU⁵³. The multilateral purse-seine access agreement between the USA and the Pacific Islands is now also managed in a way that is compatible with the Vessel Day Scheme and the limits under the WCPFC Tropical Tuna measures.

The longline fisheries under the WCPFC tropical tuna measures are managed differently, with longline fisheries for bigeye tuna species being managed under catch limits by flag, both within EEZs and on the high seas. However, developing States are currently exempt from these flag limits if their annual catch of bigeye tuna is <5000 tons. This is to provide some opportunity for development^{49,54}. Discussion towards establishing an allocation system for tropical tuna longlining, and removal of exemptions, is also taking place at the WCPFC. While PNA and other Pacific Islands members have proposed a zone-based allocation similar to the purse-seine fishery, longline fisheries are much more frequently located in the WCPFC high seas. This reduces the bargaining power of WCPFC-developing coastal States compared to the purse-seine fisheries, which are more dependent on fishing in EEZs'.

It is important to note that there is an important geographical difference between the IOTC and the WCPFC. About half of the tuna catch in the IOTC is caught in the high seas, whereas in the WCPFC, 85% of all catches occur within EEZs. However, the WCPFC countries have shown that area-based management is feasible and can help countries build negotiation power when concluding FAAs, and securing allocations through RFMOs at the regional level.

Conclusion

The concept of historical catch that a small number of DWFNs promote in the establishment of catch allocation in RFMOs is not supported by the jurisdictional framework of UNCLOS or the terms of FAAs. As our analysis has shown, within the UNCLOS framework, the sovereign rights of coastal states include the exclusive right (and concomitant responsibilities) to regulate the utilisation of fisheries resources in the EEZ. This includes determining whether or not there is a surplus and who may access it. We have also established that FAAs only grant a time-limited term of access to any such surplus by foreign vessels. They do not provide an ongoing access right beyond the arrangement period, nor remove or alter the sovereign rights of coastal states. Therefore, neither UNCLOS nor FAAs provide a legal basis for using historical catch taken by DWFN vessels in a coastal State EEZ to allocate RFMO quota to the flag State of those vessels. Such allocation towards DWFNs would represent a rejection of the very principles of equity underpinning UNCLOS. The convention was negotiated precisely with the view that developing countries should be in a position to benefit more from the marine resources in their EEZs.

As noted by²³ the IOTC is the only tuna RFMO that has not established any catch allocation system, and it has made limited progress on this despite more than 10 years of negotiation. This paper suggests that it is time for IOTC parties to seek inspiration from other RFMOs whose allocation processes reflect area-based management and other modern principles of fisheries management. To achieve this, however, a change of paradigm is needed, particularly from the EU. Having managed to secure access to the resources of coastal States in the Indian Ocean through FAAs, DWFNs now want to use that access as a basis for claiming ongoing rights to the biggest part of the allocation pie. DWFNs need to move beyond their focus on historical entitlements as it perpetuates legacies of resource dispossession and domination^{10,55}. These historical privileges were characterised by developmental and power imbalances⁵⁶. The 'win-win' and 'sustainable partnerships' rhetoric employed by DWFNs when concluding FAAs should also translate into a full recognition of the sovereign rights of coastal states over fisheries resources during negotiations of catch allocations.

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References

1. FAO. Mapping distant-water fisheries access arrangements. (FAO, Rome, Italy, 2022). <https://doi.org/10.4060/cc2545en>.

2. Gegout, C. Unethical power Europe? Something fishy about EU trade and development policies. *Third World Q.* **37**, 2192–2210 (2016).
3. Le Manach, F. et al. European Union's public fishing access agreements in developing countries. *PLoS One* **8**, e79899 (2013).
4. FAO. The state of world fisheries and aquaculture 2022: towards blue transformation. (FAO, Rome, Italy, 2022). <https://doi.org/10.4060/cc0461en> (2022).
5. Andriamahefazafy, M. et al. Sustainable development goal 14: to what degree have we achieved the 2020 targets for our oceans? *Ocean Coast. Manag.* **227**, 106273 (2022).
6. United Nations. Global Sustainable Development Report (GSDR) 2023 | Department of economic and social affairs. <https://sdgs.un.org/gsdrgsd2023> (2023).
7. Abolhassani, A. Scalar politics in transboundary fisheries management: the Western and Central Pacific Fisheries Commission as an eco-scalar fix for South Pacific albacore tuna management. *Mar. Policy* **152**, 105583 (2023).
8. Sinan, H., Andriamahefazafy, M. & Robertson, K. David against Goliath? The rise of coastal states at the Indian Ocean Tuna commission. *Front. Mar. Sci.* **9**, 983391 (2022).
9. Lodge et al. Recommended best practices for regional fisheries management organizations. <https://www.oecd.org/sd-roundtable/papersandpublications/39374297.pdf> (2007).
10. Andriamahefazafy, M., Kull, C. A. & Campling, L. Connected by sea, disconnected by tuna? Challenges to regionalism in the Southwest Indian Ocean. *J. Indian Ocean Reg.* 1–20 <https://doi.org/10.1080/19480881.2018.1561240> (2019).
11. Haas, B., Goodman, C., Sinan, H. & Davis, R. Fact or fiction? Unpacking the terminologies used in fisheries allocation discussions. *Mar. Policy* **152**, 105630 (2023).
12. European Commission. Sustainable fisheries partnership agreements (SFPAs). https://oceans-and-fisheries.ec.europa.eu/fisheries/international-agreements/sustainable-fisheries-partnership-agreements-sfpas_en (2023).
13. United Nations. United Nations Convention on the Law of the Sea - Part IV Exclusive Economic Zone. (1982).
14. Havice, E., Campbell, L. M., Campling, L. & Smith, M. D. Making sense of firms for ocean governance. *One Earth* **4**, 602–604 (2021).
15. Pittman, J., Wabnitz, C. C. C. & Blasiak, R. A global assessment of structural change in development funding for fisheries. *Mar. Policy* **109**, 103644 (2019).
16. Havice, E. & Reed, K. Fishing for Development? Tuna resource access and industrial change in Papua New Guinea. *J. Agrar. Change* **12**, 413–435 (2012).
17. CFFA-CAPE. The challenges of fisheries arrangements: the perspective of African Coastal Communities. <https://www.cffacape.org/news-blog/the-challenges-of-fisheries-agreements-the-perspectives-of-african-coastal-communities> (2019).
18. Le Manach, F. et al. Who gets what? Developing a more equitable framework for EU fishing agreements. *Mar. Policy* **38**, 257–266 (2013).
19. Andriamahefazafy, M. Governing distant-water fishing within the blue economy in Madagascar: policy frameworks, challenges and pathways. *Fishes* **8**, 361 (2023).
20. Okafor-Yarwood, I. & Belhabib, D. The duplicity of the European Union Common fisheries policy in third countries: evidence from the Gulf of Guinea. *Ocean Coast. Manag.* **184**, 104953 (2020).
21. Nash, K. L. et al. Trade and foreign fishing mediate global marine nutrient supply. *Proc. Natl Acad. Sci.* **119**, e2120817119 (2022).
22. Hammarlund, C. & Andersson, A. What's in it for Africa? European Union fishing access agreements and fishery exports from developing countries. *World Dev.* **113**, 172–185 (2019).
23. Seto, K. et al. Resource allocation in transboundary tuna fisheries: a global analysis. *Ambio* **50**, 242–259 (2021).
24. Blomeyer, R., Nieto, F., Sanz, A., Stobberup, K. & Erzini, K. Criteria for allocating access to fishing in the EU. [https://www.europarl.europa.eu/RegData/etudes/STUD/2015/540357/IPOL_STU\(2015\)540357_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2015/540357/IPOL_STU(2015)540357_EN.pdf) (2015).
25. Campling, L. The tuna 'commodity frontier' - business strategies and environment in the industrial tuna fisheries of the Western Indian Ocean. *J. Agrar. Change* **12**, 252–278 (2012).
26. Campling, L. The EU-Centered Commodity chain in Canned tuna and upgrading in Seychelles. (Queen Mary University of London, London, 2012).
27. IOTC. Historical catch estimates (1950–2021) | IOTC. <https://iotc.org/TCAC/12/data/01-estimates> (2023).
28. IOTC. Draft proposal - allocation of fishing opportunities - coastal states. <https://iotc.org/documents/draft-proposal-allocation-fishing-opportunities-coastal-states> (2020).
29. IOTC. Presentation of EU proposal. <https://iotc.org/documents/tcac06-presentation-eu-proposal-final-ver> (2020).
30. IOTC. TCAC Comments on the v5 draft allocation regime resolution. <https://iotc.org/documents/tcac-comments-v5-draft-allocation-regime-resolution> (2023).
31. Sinan, H. & Bailey, M. Understanding barriers in Indian Ocean tuna commission allocation negotiations on fishing opportunities. *Sustainability* **12**, 6665 (2020).
32. IOTC. Report of the 11th technical committee on allocation criteria. <https://iotc.org/documents/report-11th-technical-committee-allocation-criteria> (2023).
33. IOTC. Chair's draft proposal for an allocation regime v6 - clean. <https://iotc.org/documents/tcac-chairs-draft-proposal-allocation-regime-v6-clean> (2023).
34. Le Manach, F., Andriamahefazafy, M., Legroux, N. & Quentin, L. Questioning fishing access agreements towards social and ecological health in the Global South. **39** <https://www.afd.fr/en/ressources/questioning-fishing-access-agreements-towards-social-and-ecological-health-global-south> (2021).
35. IOTC. Report of the 25th session of the IOTC Working Party on tropical Tunas. <https://iotc.org/documents/WPTT/25/RE> (2023).
36. Heidrich, K. N. et al. Multiple lines of evidence highlight the dire straits of yellowfin tuna in the Indian Ocean. *Ocean Coast. Manag.* **246**, 106902 (2023).
37. European Union. Sustainable fisheries partnership agreement between the European Union and the republic of Madagascar. vol. L 182, pp. 25–81 (2023).
38. European Union. Sustainable fisheries partnership agreement between the European Union and the government of the Cook Islands. vol. L 131, pp. 3–33 (2016).
39. European Union. Protocol on the implementation of the fisheries partnership agreement between the European Community and the Republic of Cape Verde (2019–2024). vol. L 154, pp. 3–29 (2019).
40. US Senate. Report on the amendments to the 1987 treaty on fisheries between the governments of Certain Pacific Island states and the government of the United States. <https://www.govinfo.gov/content/pkg/CRPT-117erpt3/pdf/CRPT-117erpt3.pdf> (2022).
41. Cook Islands. Marine Resources Act 2005. (2005).
42. Davis, R. A. et al. Who gets the catch? How conventional catch attribution frameworks undermine equity in transboundary fisheries. *Front. Mar. Sci.* **9**, 831868 (2022).
43. Sinan, H. et al. Subsidies and allocation: a legacy of distortion and intergenerational loss. *Front. Hum. Dyn.* **4**, 1044321 (2022).
44. Österblom, H., Wabnitz, C. C. C. & Tladi, D. Towards ocean equity. 64 www.oceanpanel.org/how-distribute-benefits-ocean-equitably (2020).
45. United Nations. Goal 14 | Target 14.7. Department of economic and social affairs https://sdgs.un.org/goals/goal14#targets_and_indicators (2015).
46. WCPFC. WCPFC19 Provisional Outcomes Document. <https://meetings.wcpfc.int/node/18545> (2022).
47. WCPFC. Proposed changes to CMM 2021-01 by the Republic of Korea. <https://meetings.wcpfc.int/node/21184> (2023).

48. WCPFC. Conservation and management for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean | <https://cmm.wcpfc.int/measure/cmm-2008-01> (2008).
49. WCPFC. Conservation and Management Measure for Bigeye, Yellowfin and Skipjack. <https://cmm.wcpfc.int/measure/cmm-2012-01> (2012).
50. WCPFC. Conservation and management measure for Bigeye, Yellowfin and Skipjack Tuna in the Western and Central Pacific Ocean. <https://cmm.wcpfc.int/measure/cmm-2021-01> (2021).
51. Parties to the Nauru Agreement & Arrangement. Purse seine VDS texts. Palau arrangement for the management of the western pacific fishery - management scheme. https://www.pnatuna.com/sites/default/files/PS%20VDS%20Txt_Amended%20June2021.pdf (2021).
52. Adams, T. J. H. New bold steps – ICSF. *Samudra* 22–25 (2011).
53. Council of the & European Union. Proposal for a council decision on the signing, on behalf of the union, and provisional application of the protocol on the implementation of the fisheries partnership agreement between the European Community on the one hand, and the Republic of Kiribati, on the other (2023–2028). <https://data.consilium.europa.eu/doc/document/ST-9529-2023-INIT/en/pdf> (2023).
54. WCPFC. Conservation and management measure for Bigeye, Yellowfin and Skipjack Tuna in the western and central Pacific Ocean. <https://cmm.wcpfc.int/measure/cmm-2018-01> (2018).
55. Sinan, H. Equitable tuna governance in the Indian Ocean. (Dalhousie University, 2021).
56. Decker Sparks, J. L. & Sliva, S. M. An intersectionality-based analysis of high seas policy making stagnation and equity in United Nations negotiations. *J. Community Pract.* **27**, 260–278 (2019).

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Author contributions

M.A. led the writing and revisions of the manuscript. M.A., B.H. and Q.H. conceptualised the paper. M.A. and B.H. did the data collection and wrote

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