

Greenpeace Contribution to the Report of the Secretary-General to the Resumed Review Conference on the United Nations Fish Stocks Agreement

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1. Summary and recommendations

Greenpeace attaches great importance to the full implementation of the *UN Agreement for the Implementation of the Provisions of UN Convention on the Law of the Sea Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (UNFSA) and welcomes the ongoing review process as a mean to make progress towards sustainable tuna fisheries and their contribution to the economies and livelihoods of coastal communities around the world.

This briefing builds on the outcome of the previous Review Conferences [1,2] and on the suggestion made during the 11th Round of Informal Consultations of States Parties to the UNFSA that civil society organizations may submit comments to the Chair of the 2016 UNFSA resumed Review Conference for their consideration in the review process.

The document focuses on tuna fisheries and is based on Greenpeace's work both documenting fishing activities at sea and contributing to the work of tuna regional fisheries management organizations (RFMOs) in the Western Central Pacific, the Indian and the Atlantic Oceans. In order to make progress on the implementation of the provisions of the UNFSA, **Greenpeace calls on the 2016 UNFSA resumed Review Conference to consider the implementation of the Agreement in relation to:**

1. Measurement and management of fishing capacity

- the continuous expansion of global tuna fishing capacity and effort;
- the lack of *efficient, transparent and equitable systems*¹ put in place at RFMOs to manage fishing capacity;
- the obligations and need by States parties to the UNFSA, including through RFMOs, to collect the data needed to effectively manage fishing capacity and effort;
- the unregulated proliferation of fish aggregating devices and related tracking technology, their contribution to fishing capacity and the urgent need to drastically reduce their numbers;
- the lack of information concerning subsidies which contribute to overcapacity;
- the lack of progress in the fair and equitable allocation of tuna resources.

2. Implementation of the precautionary and ecosystem-based approaches

- cases where available scientific advice is not duly taken into account;
- the exercise of precaution where information is uncertain, unreliable or inadequate;
- the slow progress made in relation to target and limit reference points in all tuna RFMOs, almost fifteen years after the entry into force of the agreement;
- the extent of impacts of tuna fishing on non-target, associated and dependent species, sharks and by-catch species in deep sea fisheries in particular, despite some progress on by-catch mitigation measures;
- inadequate implementation of UNGA resolutions relating to bottom trawling, including UNGA resolutions 61/105, 64/72 and 66/68, as well as environmental impact assessments;
- the dire conservation status of some of these species, in particular sharks, rays, marine turtles and seabirds;

¹ Language taken from paragraph 7 of the FAO International Plan of Action for the Management of Fishing Capacity.

- the insufficient progress in the use of area-based management tools, marine protected areas and reserves in particular;
- the failure to implement key provisions of the UNFSA, the precautionary and ecosystem-based approaches in particular, in relation to the most significant development in tuna fisheries in the last decade, the widespread proliferation of drifting fish aggregating devices and associated tracking technologies.

3. Monitoring, control, surveillance and enforcement of fishing activities

- compliance with data reporting obligations and the need for mechanisms to penalize those failing to report;
- the impacts of fishing where no effective measures are in force and the requirement to not allow fisheries to take place in the absence of specific regulations;
- existing penalty regimes and sanction mechanisms and whether those act as effective deterrents to fail to meet compliance requirements;
- loopholes in the monitoring, control, surveillance and enforcement of fishing activities, including, but not limited to: vessel monitoring systems, observer coverage, at-sea transshipments, consolidated lists of authorized vessels and port State measures.
- lack of due diligence by flag States in implementing their flag State responsibilities as highlighted by the International Tribunal of the Law the Sea in Case 21 last 2 April 2015.

4. Good governance, transparency and participation.

- promoting the ratification of the Agreement and incorporation of its core principles into existing regional conventions;
- RFMO performance reviews, whether they are conducted periodically and assessment of the implementation of their recommendations;
- the impact of the Advisory Opinion of the International Tribunal of the Law the Sea in Case 21 and its findings on cooperation in the management of shared stocks;
- decision making procedures;
- transparency and access to information on fishing activities;
- transparency and participation of civil society organizations.

2. Measurement and management of fishing capacity: progress urgently needed

Despite numerous statements, agreements, instruments and declarations highlighting the need to tackle overcapacity and overcapitalization in fisheries, these are far from being addressed.

Greenpeace believes that the absence of adequate mechanisms to manage fishing capacity and allocate fish resources in a fair and transparent manner is one of the most pressing failures by parties to the UNFSA to implement its provisions (article 5(h)). This is so also because overcapacity underpins most other issues of serious concern in fisheries management such as overfishing, IUU fishing, decreased profitability or unfair competition among fleets.

Not only are the mechanisms to ensure that fishing capacity remains within sustainable limits not in place, but the framework to ensure that existing fishing capacity is accurately measured, arguably the first step to manage fishing capacity effectively, is lacking too. In light of these gaps, fishing companies have continued to invest in more and better-performing vessels and technology and subsequently will try to ensure that these new vessels maintain access to fish resources. Since the 2010 UNFSA resumed Review Conference, and despite its recommendations, tuna fishing capacity and effort have continued to increase globally.

2.1. The world tuna fleet keeps expanding

Recent increases in global tuna fishing capacity and effort are largely explained by the evolution of

the purse seine fleet, now responsible for some 60% of the world's tropical tuna catches. Since the early 1990s, purse seine catches of tropical tunas increased by nearly 60%, reflecting an increase of about 33% in free school catches and nearly an 82% increase in catches made on floating objects [3]. During the process established to harmonize and improve the performance of tuna RFMOs – the Kobe process – emphasis was given to the issue of fishing overcapacity, by developed countries in particular. At Kobe II (2009) many participants argued in favor of a freeze in global tuna fishing capacity [4]. Two years later, Kobe III recommended “*that developed fishing members freeze large-scale purse-seine capacity under their flag*” [5].

Tuna fishing capacity, however, has greatly increased since 2009. At a workshop organized by the European Commission in 2014 [6], it was reported that out of 625 large scale purse seiners fishing full time for tropical tuna species, 52 vessels (or 8.3%) would have been added to the fleet since 2009, 30 of which were flagged to developed countries. In addition between 50 and 60 vessels were scheduled for commissioning through to 2015. Of these, 25 to 30 could be replacements, though not necessarily of the same capacity. As it was noted, those new additions are likely to account for more fishing capacity than previously existing vessels, since they are technologically more advanced. More recently, a presentation made at the April 2015 Western and Central Pacific Ocean Purse Seine Bigeye Management Workshop, estimated that there has been a 10% increase in the global number of purse seiners over the last year [7].

Fishing capacity is not adequately measured by just vessel numbers, tonnage or well capacity. The large and unregulated increase in the number and efficiency of drifting fish aggregating devices (dFADs)² and associated tracking devices (buoys of different types) in all ocean areas translates into fishing capacity increases. A 2012 report by the Pew Environment Group estimated that the number of drifting FADs *put into the oceans each year* would be in the range of 47,000 – 105,000 [8]. The wide range gives an idea of the uncertainties involved. Scott and Lopez estimated that the amount of FAD deployments per year could be on the order of 91,000 [3]. As noted in section 2.2 below, dFAD numbers have been increasing year after year in the absence of adequate regulations.

Even though total longline landings of tuna species recorded by the FAO have declined to 526,406 mt from 2004 to 2010 (last year of data available), globally the longline fleet continues to expand too, with all tuna species targeted by longline fleets now either overfished, experiencing overfishing or showing signs of stock declines and declining catch per unit effort (CPUE) leading to poor economic performance [9]. Limitations on the ability to build longliners larger than 24 meters in length have encouraged companies to build smaller longliners with high navigational autonomy to fish on the high seas and freezing facilities to get access to the sashimi market [10].

2.2. Insufficient measures to manage fishing capacity at tuna RFMOs

The UN Fish Stocks Agreement, the FAO Code of Conduct [11], the FAO International Plan of Action for the Management of Fishing Capacity [12] and several UNGA Resolutions [13], require fishing capacity to be effectively managed, overcapacity prevented and eliminated and the data to inform such process be fully collected and available. The FAO International Plan of Action, for instance, asks “*States and regional fisheries organizations, to achieve world-wide preferably by 2003, but not later than 2005, an efficient, equitable and transparent management of fishing capacity*”.

The fact that vessel numbers, and typically gross tonnage and/or engine power, are often the only metric considered in capacity management measures, continues to be a major flaw in the current management framework. These provide an overly simplistic and insufficient measure of capacity, which results in inadequate management and cannot account for increases in fishing capacity through efficiency improvements, gear modifications and the development and use of new technologies.

The increase in large-scale purse seine numbers and the proliferation of dFADs and associated tracking devices are a good example of the little progress being made so far. Unfortunately, the will

2 We use the definition employed by the French purse seine industry, according to which drifting FADs are “*artificial or natural floating objects released or left at sea by fishermen with a beacon (to be tracked) in order to attract schooling fish species underneath, thus increasing their catchability*”.

of States to agree on measures to limit the expansion of tuna fleets, large-scale industrial fleets in particular, has clearly been lacking. The wide range of potential impacts associated with higher dFAD numbers has been discussed for a long time [14–27], yet so far *FAD Management Plans* adopted across tuna RFMOs deal – albeit insufficiently – with FAD-related data collection and have not resulted in any meaningful restriction to dFAD numbers. On the contrary, dFADs and associated tracking devices have continued to increase. In 2015 a number of Working Groups on FAD management will be convened by RFMOs.

Greenpeace calls the 2016 UNFSA resumed Review Conference to assess progress in all RFMOs in relation of the management of fishing capacity while we note the following examples:

- in the **Western and Central Pacific Ocean**, despite the introduction of the Vessel Day Scheme, purse seine fishing capacity and effort have continued to increase well beyond the 2004 level objective [28], as has the number of dFADs used in the fishery [29]. Out of 75 new purse seiners built globally since 2010, 52 are operating in the WCPO, and those new vessels are significantly larger than the ones being replaced [7]. As a result, 2013 bigeye tuna purse seine catches in weight, mostly juveniles, exceeded those of the longline fleet [30]. Longline fishing capacity is equally not managed effectively [10].
- the 2009 1st IOTC Performance Review [31] warned about the loophole created by Fleet Development Plans in the **Indian Ocean**. Should those plans be implemented and assuming that countries already fishing in the region maintain their baseline capacity, *“the fleets fishing for tuna and tuna-like species in the Indian Ocean by the year 2020, will be more than 250% over the baseline capacities”* [32]. According to the IOTC Scientific Committee the number of dFADs has *“dramatically increased over the past 10 years”* and may reach around 10,000 monitored FADs in 2013 *“for the EU and Seychelles purse seine fleets only”* [33]. Recent research found that there are now on average two to four times more floating objects in the SE Seychelles and an even larger figure in the NW Seychelles; off the coasts of Somalia the multiplication factor can reach up to 20 or 40 times [21]. The 2015 IOTC annual meeting adopted alarmingly high dFAD limits [34] which may result in further fishing capacity increases, exacerbate the impacts of FADs on tuna stocks and marine ecosystems and set a very negative precedent for other tuna RFMOs [35].
- In the **Atlantic Ocean** capacity management by ICCAT is mostly limited to its Record of Vessels over 20 meters in length overall and limits on entries in several fisheries [36]. The number of dFADs has been widely increasing in the region during recent years, potentially reaching 18,000 or more dFADs, and resulting in an estimated *3.7 fold increase since 2004* [37]. Following widespread criticism about the depletion of the bluefin tuna stocks managed by the Commission, ICCAT introduced mandatory capacity management plans in the eastern bluefin tuna fishery [38], a model which could be expanded to other fisheries.
- In the **Eastern Tropical Pacific**, despite IATTC Resolution C02-03 [39] and the 2005 Plan for Regional Management of Fishing Capacity [40], fishing capacity has continued to increase. In early 2011, the Permanent Working Group on Capacity (PWGC) concluded that purse-seine capacity was well above the level that facilitated longer fishing seasons and better economic returns and further recognized that the potential purse seine capacity was estimated at 287,000 m³, 80% larger than the C02-03 target of 183,000 m³ [41]. The number of dFADs deployed in the region has also been multiplied by a factor of 3.3 during the period 2005-2012, with 4,300 dFADs seeded in 2005 compared to 14,000 dFADs in 2013 [37,42].

The precautionary approach is also relevant for the management of fishing capacity. The 1996 *FAO Technical Guidelines on the Precautionary Approach to Capture Fisheries and Species Introductions* cautions that *“technological changes aimed solely at further increasing fishing capacity would not generally be seen as desirable”* and that *“a precautionary approach would encourage careful consideration of the side effects of new fishery technologies before they are introduced”* [43]. The recent and massive expansion of new fish aggregating and tracking technology has clearly not followed this guidance.

2.3. Data collection in relation to the management of fishing capacity

Managing fishing capacity and determining whether and where excess capacity exists requires the identification of all active fishing vessels and their characteristics, including extensive and accurate data on size, equipment and operational characteristics of vessels, such as engine power, overall hold and freezing capacity, gear specificities, fish-finding or aggregating technology. The submission of reliable and accurate data is a fundamental first step. **While reaching an agreement on allocation and capacity management mechanisms may prove difficult, there is no valid excuse for the lack of exhaustive information on capacity to date.**

The IOTC Working Party on Fishing Capacity concluded in October 2009 that basic information such as detailed data on catches, vessels and effort were not available for many fleet segments [44]. A 2013 assessment of fishing capacity commissioned by the IOTC still stated that “*information was insufficient to produce estimates of fishing effort, therefore we focused on obtaining estimates of fleet size*”, “*a limited amount of data on FADs was presented due to the secrecy surrounding FADs deployment*” or that “*there is considerable uncertainty behind the estimation of output capacity from the size of artisanal fleets*” [45].

If we take a fundamental component of capacity and effort, dFADs, in the most important fishing gear by catch volume, purse seining, the lack of accurate data about their use, types and attached technology represents a major withdrawal from flag States obligations on the collection of data on fishing capacity: the exact numbers of dFADs and associated locating devices are unknown, let alone other parameters such as their location, distribution, rates of loss or recovery. This is the case in all regions. The first steps to collect and analyze these data have only just begun [27,46,47] despite over two decades of increasing use and technological improvements in FAD fishing.

The lack of reliable data from small-scale and artisanal tuna fisheries is continuously identified as an important problem, in particular concerning certain coastal States with large and/or rapidly expanding fleets [45]. It is therefore essential for any future management and allocation of resources that the capacity of all fleets be accurately accounted for.

While the previous UNFSA Review Conferences have recommended the elimination of subsidies that contribute to illegal, unregulated and unreported fishing, overfishing and overcapacity, comprehensive and regular information on subsidies which contribute to fishing capacity is not available and it continues to be one of the most opaque policy areas.

2.4. Allocation of tuna resources

Access to fisheries on the high seas is currently far from equitable, and the benefits of the fisheries are largely taken by the major fishing nations and companies in developed countries. Many coastal States have legitimate development aspirations to establish domestic fishing and processing industries, however those aspirations are being threatened by the overexploitation and overcapacity of the major fishing fleets. A recent study estimated that just four companies control 21% of the skipjack and yellowfin tuna WCPO fishery, the largest tuna fishery in the world [48].

The lack of a fair allocation of tuna resources has been an impediment to reductions in global tuna fishing capacity so far: those countries which have been largely excluded from tuna fisheries to date want a new allocation system to be agreed first before fishing mortality and capacity limits are set and further conservation and management rules are imposed. They fear, with reason, that those who currently have the largest share of resources will attempt to keep it, using resources conservation arguments.

Greenpeace supports the allocation of resources based on transparent environmental and social criteria, granting preferential access to those fishing with lower environmental impact and providing greater benefits to coastal fishing communities. The wide expansion of industrial fishing methods is however leaving little to no space for the development of fleets designed to maximize returns to these communities and minimize impacts on the world's marine ecosystems [49]. Much emphasis is currently being placed on transferring fishing capacity from

developed countries to developing countries. However, less attention is drawn to whether certain types of capacity fulfill the needs of their coastal communities and how to ensure these transfers do not result in developing countries being locked into business models which are unlikely to meet their needs. More information on Greenpeace perspectives on the issue of management of fishing capacity and allocation can be found in Greenpeace reports [50,51].

3. Implementation of the precautionary and ecosystem-based approaches

The precautionary and ecosystem-based approaches are widely accepted cornerstones of modern fisheries management. The UN General Assembly regularly urges States to apply them widely, including through RFMOs, in its annual resolutions on sustainable fisheries [13]. Even though Annex II of the UNFSA contains specific requirements to implement the precautionary approach in fisheries, progress is very slow.

IATTC and WCPFC are the only tuna RFMOs which explicitly mention the precautionary approach in their convention texts, while others should yet incorporate these principles in eventual updates of their conventions, which are currently being discussed [52]. However, it is often noted that the specific reference to the precautionary approach does not imply that it is effectively applied [53].

Greenpeace urges consideration be given to the following aspects in relation to the implementation of the precautionary and ecosystem-based approaches:

3.1. Best available scientific advice

About half of the stocks (48%) of major commercial species of tunas globally are either overfished and/or subject to overfishing, according to a recent report [54]. These include bigeye and bluefin tuna in the Western and Central Pacific Ocean; bigeye and yellowfin tuna in the Eastern Pacific Ocean; Pacific bluefin tuna and Pacific Northern albacore; bigeye, yellowfin and albacore tuna and bluefin tuna in the Atlantic Ocean; or albacore in the Indian Ocean. There are many examples for these stocks where regulations agreed by States parties to RFMOs have not followed the best available scientific, resulting in their overexploitation.

3.2. Consideration of uncertainty

The complexities of fisheries science, including changing environmental conditions, but also the reliance on poor and incomplete sets of data on catches and fleet activities, make stock assessments of tuna and tuna-like species highly uncertain. The unaccounted introduction of new technology, such as increasing use of dFADs, today the dominant catch method in the world's tuna fisheries, poses great challenges to scientists, making it difficult to estimate CPUEs for skipjack, juvenile yellowfin and juvenile bigeye tunas [25]. The lack of operational data for some fleets as has been the case in the Western and Central Pacific Ocean [55], poses important difficulties. These uncertainties are too often not reflected in more precautionary management decisions at RFMOs and the lack of conclusive evidence or certainty continue to be regularly used as an excuse to take no action. Low probabilities of achieving management objectives are of concern too: ICCAT uses a 50% probability of meeting management objectives in its North Atlantic swordfish [56] and Southern albacore [57] management plans and a 60% probability in its current recovery plan for bluefin tuna [58]. WCPFC uses a 60% probability in its Pacific bluefin tuna recovery plan [59].

3.3. Progress on target and limit reference points

Only initial steps have been given in agreeing target and limit reference points as required by UNFSA, for instance at IOTC [60,61]. Progress must speed up, particularly considering that the UNFSA has now been in force for almost 15 years. In contrast to the requirements contained in Annex II of the UNFSA, most tuna RFMOs continue to widely consider F_{MSY} as a management target, rather than a limit. A resolution adopted at the last IOTC meeting establishes B_{MSY} and F_{MSY} as interim target reference points [34]. WCPFC has more precautionary limit references, using B_{MSY} where adequate data is available on stock-recruitment relationships, or the alternative limit of 20%

of the unfished spawning biomass [55], but lacks precautionary target reference points for all stocks. At ICCAT, reference points are limited so far to those been established for North Atlantic albacore [62] and North Atlantic swordfish [56,63]. Some progress towards the adoption of Management Strategic Evaluation (MSE) procedures has been made, including following recommendations at the Kobe III tuna RFMOs meeting to establish a Joint MSE Technical Working Group [5,64].

3.4. Conservation of non-target and associated or dependent species

Fisheries continue to have a very detrimental impact on vulnerable species. A recent global review of the status of 1,041 chondrichthyan fishes – sharks, rays and chimaeras – estimated that **a quarter of them are threatened according to IUCN Red List criteria due to overfishing** (targeted and incidental). Only one third of these species are considered safe, which is the lowest fraction of safe species among all vertebrate groups studied to date. The report finds that 46.8% of all examined species are data deficient [65]. The quality and quantity of data recorded and reported for all shark catches must be urgently improved. The IOTC scientific committee acknowledges that *“there is a paucity of information available”* for shark species, and more worryingly that *“this situation is not expected to improve in the short to medium term”* [33]. ICCAT recognizes that shark data reporting is improving, but still weak [63]. In the WCPFC reporting of mandatory data on sharks is also improving but important gaps remain, including concerns over under-reporting and non-reporting [66].

Many shark stocks are targeted in the absence of adequate regulations. Sharks catches and landings should be prohibited by States unless agreed international rules that guarantee their conservation are in place. These should include catch limits that are precautionary enough to ensure the conservation of each population, as well as closed areas. Targeted fisheries should not be allowed on any depleted or vulnerable population or in cases where not enough information exists to estimate the size of the population. Regulations introduced to manage shark fisheries should make it mandatory for sharks to only be landed with their fins naturally attached to the carcass in all cases. Requiring that all sharks are landed with fins naturally attached will enable better data collection and enforcement of prohibitions on the retention of at-risk species, as recognized by the IOTC scientific committee [33]. Gears and bait that increase shark catches, such as wire tracers and shark lines attached to surface buoys, should be banned.

In the case of bottom fisheries for deep sea species, the highly unselective nature of bottom trawling makes the issue of conservation of non-target, associated or dependent species of primary concern. Despite some improvement, in the great majority of deep-sea fisheries on the high seas the bycatch is virtually unregulated.

Tuna fisheries continue to be an important threat to sea turtles and marine seabirds. 300.000 sea turtles and at least 160.000 seabirds may die annually in longline fisheries [9]. Bycatch figures for industrial tuna longline fisheries are very scarce, and observer coverage is not sufficient to draw solid conclusions [67]. Systematic data collection on interactions between tuna fisheries and these species and continuous evaluation of mitigation measures adopted by RFMOs continues to be a major problem to be addressed.

3.5. Use of area-based management tools

Marine protected areas, including fully protected marine reserves, play a fundamental role in the implementation of the ecosystem and precautionary approach to oceans management. They are key in achieving the conservation of viable populations, support fisheries management, secure ecosystem processes and integrity and protect ecologically or biologically sensitive areas, vulnerable marine ecosystems and spawning grounds. Article 5(g) of the Agreement requires Parties to protect biodiversity in the marine environment.

Since the last UNFSA resumed Review Conference, RFMOs managing bottom fisheries have made some progress to protect vulnerable marine ecosystems both through area closures and conducting environmental impact assessments following the requirements of UNGA resolutions. Yet,

implementation is far from complete, and bottom fishing still takes place in areas where vulnerable marine ecosystems are known or likely to occur which should be closed to bottom fishing. There is still a long way to go before UNGA resolutions 61/105, 64/72 and 66/68 [68–70] are fully implemented.³

While RFMOs charged with the management of bottom fisheries have made progress, the use of area-based management tools by tuna RFMOs to protect spawning aggregations, close areas with high by-catch rates, including of vulnerable or depleted species, or ensure the protection of certain life stages of pelagic species, is *minimal* and in some recent cases existing closures have even been reduced, such as existing partial closures in the Atlantic [71,72] or in the Indian Oceans [73,74]. The challenges with the use of spatial management tools for pelagic species have received attention [75–79]. Part of the problem is related to the lack of accurate data collection and reporting. Even though some of these data shortcomings have been addressed, very little progress has been made [80]. Greenpeace fully shares the view that “*debate over the efficacy of protected areas relative to other conservation measures cannot be resolved without further implementation of MPAs in the pelagic ocean*” [75].

3.6. Prior assessment of damage/reverse burden of proof

The implementation of the precautionary approach requires, among others, appropriate placement of the burden of proof. Precautionary management involves explicit consideration of undesirable and potentially unacceptable outcomes and provides contingency and other plans to avoid or mitigate such outcomes. “*Undesirable or unacceptable outcomes include overexploitation of resources, overdevelopment of harvesting capacity, loss of biodiversity, major physical disturbances of sensitive biotopes, or social or economic dislocations,*” all of which are common features in global tuna fisheries today. Undesirable conditions can also arise when a fishery is negatively influenced by other fisheries [43].

Environmental impact assessments are key to the implementation of the precautionary approach and are already required by article 5(d) of the UNFSA. Paragraphs 112 through 130 of UNGA resolution 64/72 [69] require EIAs to be carried out prior to the authorisation of bottom fisheries on the high seas. Their utility underscores the relevance and importance of article 5(d) and the use of environmental impact assessments is much underutilized in fisheries management.

3.7. The unregulated proliferation of drifting fish aggregating devices as an example of the failure to implement articles 5 and 6 of the UNFSA

The massive proliferation of dFADs and related fish aggregating and tracking technology in the last few years, represents an unaccounted and unregulated increase in fishing capacity in one of the main fleet segments targeting tropical tunas, purse seining. Additionally, it is Greenpeace's view that such unregulated expansion represents a fundamental failure to comply with basic provisions of the UNFSA, and in particular to implement the precautionary approach.

The potential impacts of the current extent of dFADs use are serious and involve the catch of mainly small, immature skipjack and yellowfin tunas, and significant numbers of juvenile bigeye tuna; diminished yields from tropical tuna fisheries; potential displacement of tuna schools to low-productivity areas, competitive disadvantages for some species; potential changes in tuna migration patterns; potential modification of population genetics by increasing connectivity and genetic exchange between populations that were isolated before; reduction of spawning potential and higher percentage of fish described by empty stomachs and poor individual condition; or 2.8 to 6.7 higher discard rates than fishing on free-schools of tuna [14–27]. Some of these impacts are well established while others remain to be confirmed, better understood and/or quantified. Certain impacts may become even more serious as FAD numbers increase [81]. Further, fleets extensively using dFADs are displacing other fleets using more selective fishing gear, while the impact on

³ The Deep Sea Conservation Coalition, of which Greenpeace is a member, will be conducting a review of the implementation of the UNGA resolutions in the management of deep-sea fisheries on the high seas in early 2016 with more detailed information.

associated and dependent species by a few operators is disproportionate: in the largest skipjack tuna fishery in the world, that of the Western and Central Pacific, between 9 and 14 purse seiners heavily dependent on dFADs out of a fleet of slightly over 300 purse seiners are responsible for 50% of purse seine bigeye tuna catches [7].

The unregulated and global proliferation of dFADs represents a failure by States parties to the UNFSA and RFMOs to fulfill the requirements under:

- article 5(b) requiring States to take into account, in adopting measures, the interdependence of the stocks. While the main target species of purse seiners setting on dFADs is skipjack tuna, they catch small, immature yellowfin and bigeye tunas too [23]. Large catches of small tunas reduce the long term productivity of these fisheries. Overfishing and the increase in juvenile bigeye tuna catches have resulted in a considerable reduction in the potential yield of the WCPO bigeye tuna stock. The loss in yield per recruit due to excess harvesting of juvenile fish is substantial [55]. The FAO recommends that in fully utilized fisheries – such as most tuna fisheries at present – the harvesting of immature fish should be avoided [43]
- articles 5(d) and 6(3)(c) requiring States to assess and take into account the impacts of fishing on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks. dFAD numbers have been allowed to expand unrestricted and unregulated without a proper assessment of their impacts. The *1996 FAO Technical Guidelines on the Precautionary Approach to Capture Fisheries and Species Introductions* cautions that when new fishery technology is introduced, “it should be carefully evaluated to assess its potential direct and indirect effects”. A precautionary approach “would provide for a process of initial and on-going review of the effects of fishery technology as it is introduced or evolves in local practice,” while “proponents of new fishery technology would be required by the State to provide for a proper evaluation of the potential impacts of new techniques before authorization is given” [43]. Art. 206 of UNCLOS also requires States to assess the potential effects of planned activities under their jurisdiction or control that may cause significant harmful changes to the marine environment. Fishing with dFADs result in 2.8-6.7 higher discard rates than fishing on free-schools of tuna [24];
- article 5(f) requiring States to minimize pollution, waste and catch by lost or abandoned gear. Thousands of dFADs and their electronic tracking devices are regularly abandoned after drifting out of the productive fishing grounds, making it too expensive for the fishing vessel to recover, or FAD buoys become disabled, making them impossible to find again. According to the Parties to the Nauru Agreement, several thousands of FADs are lost or abandoned every year in the WCPO, washing up on beaches, damaging coral reefs or drifting at sea contributing to the ever-growing Pacific garbage patch [29]. Regional observers in the Indian Ocean report a significant number of FADs constructed with fragments of nets, being abandoned at sea without any tracking beacon [82]. Recent research shows that 10% of the buoys released in the Indian and Atlantic Oceans end up in beaches, suggesting that between 1,500 and 2,000 may be lost onshore each year by the French purse seine fleet alone [27];
- articles 5(j) and 6(3)(d) requiring States to collect and share, in a timely manner, complete and accurate data concerning fishing activities on fishing effort, as set out in Annex I of the UNFSA (see section 2 above);
- articles 6(2) requiring States to be more cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures. On the contrary, precautionary limits to the use of dFADs have been consistently opposed by States with important purse seine fleets parties to RFMOs on the grounds that there is no conclusive information about their impacts, despite all the indications available.

4. Monitoring, control, surveillance and enforcement of fishing activities and IUU fishing

Although progress has been made since the last UNFSA Review Conference, both at national and regional level, monitoring, control, surveillance and enforcement (MCSE) of fishing activities still require substantial improvement. Several countries have devoted significant resources to fighting IUU fishing, the implementation of legislation enacted by the EU [83] and the US [84] being two well known examples. RFMOs have adopted regulations establishing more thorough compliance review processes to assess their parties' performance in complying with their conservation and management measures [85–88]. These demand a substantial amount of work by RFMO Secretariats and must be adequately resourced and funded.

Aspects where progress is much needed include the lack of deterrent consequences for non compliance, the improvement of monitoring, control and surveillance of fishing activities or closing down some well known loopholes which still allow IUU caught fish to enter the market.

Greenpeace suggests that the UNFSA Review Conference considers, *inter alia*:

4.1. Compliance with basic obligations: no data = no fishing

Scientists continue to highlight the difficulties in performing stock assessments that require extensive sets of data. The obligation to report accurate catch and effort data, as well as other data relevant to fisheries management is of fundamental importance. Even though data reporting is slightly improving, the lack of compliance with data reporting requirements is still far too common and has been identified elsewhere [31,89]. In some cases, poor data reporting continue to be a serious shortcoming. A recent IOTC document stated that “*in 2013 overall levels of compliance with Resolution 10/02 [on mandatory statistical requirements] continued to remain relatively poor, showing no significant improvement compared to 2012 and 2011*” [90]. In areas covered by the WCPFC some fleets sent their operational data for the first time only in 2014, and several important gaps remain [66]. The poor quality of data submitted on non target species, sharks in particular, continues to be a widespread problem. Countries not fulfilling their reporting obligations should face consequences, including quota penalties and decreased access to resources. ICCAT has already approved a recommendation for penalties which includes a prohibition on the retention of species for which fleet and catch data has not been provided [91]. Such recommendation should be expanded to other mandatory reporting requirements, such as effort and size composition of the catch. Other RFMOs should follow suit.

4.2. The last U in IUU fishing: no measures = no fishing

The principle that fishing should not take place in the absence of conservation and management measures has been already endorsed by the UNGA in relation to bottom fisheries [68]. Fishing should not be allowed in the absence of specific regulations covering stocks (both targeted and taken), bycatch and environmental impacts. This is particularly the case with fisheries targeting highly vulnerable shark species.

4.3. Incentives to ensure compliance

The lack of penalty regimes and adequate sanction mechanisms continues to be a major weakness. The costs associated with non-compliance with fishing regulations are far outweighed by the benefits derived from operating illegally. This was clearly visualized last year when the Initial Public Offering (IPO) of China Tuna Industry Group (CTI) on the Hong Kong Stock Exchange, included in its prospectus information inviting investors to fund further expansion of the companies' fishing activities on the premise that even though the company acknowledged to have breached catch limits in the past, “*the risk that the WCPFC or IATTC impose any sanction against the PRC government in respect of the catch limit regime would be remote in the near future*” [92].

Strict penalty and sanction rules should be adopted which act as a deterrent for operators breaching the rules and States who are not fulfilling their obligations under international law. This should

include quota penalties, trade sanctions, the inclusion of vessels on a global RFMO blacklist, and the withdrawal of the licenses of the vessels involved. Contracting Parties should be asked to initiate legal proceedings and apply available sanction mechanisms under their national legislation and report back to the relevant RFMO. RFMOs should identify countries and companies that are found to be repeatedly involved in illegal operations in any tuna fishery.

4.4. Closing some known loopholes

In improving MCSE of fishing activities, some of the areas where changes are needed as well as existing loopholes allowing operators to break the rules are well known:

- **Vessel Monitoring Systems** provisions should be consistent across RFMOs. Currently, requirements on frequency reporting, types of vessels requiring to carry VMS and others vary across regions. Given the evolution of technology it should pose no difficulty for all vessels over 15 meters length operating outside the jurisdiction of their flag State (as in IOTC [93]), to report hourly its position. VMS should be centralized (as required in WCPFC [94] or in the ICCAT bluefin tuna fishery [58]) to allow for crosschecking of information and transparency of the system. Provisions should be adopted making VMS data be available to the scientific community following pre-established procedures, which could greatly improve the ability of scientific committees to improve their advice;
- **observer coverage is generally insufficient.** In most RFMOs the observer coverage of some important fleets, particularly longliners, is limited to a mere 5%, which is even then poorly implemented [95,96]. In the IOTC, for instance, *“the majority of CPCs are not reaching the minimum level of 5% coverage of operations/sets by gear type specified in Resolution 11/04”* [90]. The WCPFC affirms that the WCPFC Secretariat does not have the information required to assess whether the 5% observer coverage requirement is met [97]. The case is similar with ICCAT since not all annual reports submitted by its parties have submitted the relevant information [98].

A 100% independent observer coverage on board all large-scale fishing vessels is an essential requirement to avoid under-reporting and misreporting. Given that 100% observer coverage currently is not possible across all segments of the fleet, a more limited coverage could be considered in some cases, coupled with enhanced international boarding and inspection schemes, an emphasis on port controls in each region and a prohibition of at-sea transshipment;

- **at-sea transshipments should be prohibited.** Illegal at-sea transshipments continue to be one of the main loopholes allowing fish caught illegally and/or unreported to be laundered into the world's fish markets. Although some RFMOs have moved towards stricter regulation of at-sea transshipments, allowing them only in the presence of regional observers, non-compliance with transshipment regulations continues to be widely identified by regional observer programmes [99–102]. Low observer coverage on longliners further facilitates illegal transshipments. With at-sea transshipments prohibited for purse seiners, there is no reason these bans could not be extended to all regions, fleets and stocks. There are additional benefits from an at-sea transshipment ban such as more regular landing of catches directly in port, facilitating embarking of observers, allowing crew to have a respite from long periods at sea, economic benefits to coastal States as well as increased inspection of fishing vessels and detection of IUU fishing activities;
- **adequately fund and complete the consolidated list of authorized tuna vessels.** States parties to tuna RFMOs should make sure that the consolidated list of authorized tuna vessels currently in progress is adequately resourced and funded, following the recommendations from Kobe III [64]. The accuracy of regional registers should be ensured, as well as the real-time updating of the information. This should be a first step towards a global record of fishing vessels based on a unique vessel identifier.
- **port State measures.** To date only 12 parties have ratified, accepted, approved or acceded

the FAO Port State Measures Agreement (PSMA).⁴ Some RFMOs have agreed on port State measures since the completion of the PSMA [103,104]. The UNFSA Review Conference should call on all States to sign and ratify the PSMA at the shortest time possible for its entry into force. Until that time, all States should work to incorporate the provisions of the agreement into their national port regulations.

5. Governance, transparency and participation

More modern, transparent and participatory fisheries management is required both at the national level and at RFMOs. Civil society participation is not always sufficiently allowed, particularly evident in closed meetings, but also due to costs associated with meeting attendance.

Greenpeace suggests that the UNFSA Review Conference considers, *inter alia*, the need to:

- **continue to promote the ratification of the Agreement and incorporation of its core principles into existing regional conventions.** Conservation must be put at the core of the mandates of RFMOs. RFMO conventions and rules of procedure need to be reviewed and amended as necessary to implement the requirements of the FSA and the recommendations of the Review Conference;
- **conduct performance reviews periodically and assess the implementation of their recommendations independently.** There continues to be insufficient consequences for poor RFMO performance. The Kobe Action Plan had recommended performance reviews every 3–5 years [105], however only CCSBT and IATTC have officially committed to a regular schedule of performance reviews [106]. All too often, the recommendations of independent reviews have not been fully implemented. Performance reviews should be conducted periodically, including assessing the implementation of their recommendations. Such assessments must be independent. It has been suggested that this could take the form of a periodic performance audit of RFMOs conducted by independent expert teams under UNGA auspices, based on transparent criteria or a regularly convened UNGA workshop open to all stakeholders, including NGO observers, to review and discuss RFMO and flag-State performance [80];
- **ITLOS Advisory Opinion.** The International Tribunal of the Law the Sea (ITLOS) delivered an important advisory opinion on a request submitted by the Sub-Regional Fisheries Commission on 2 April 2015 [107]. ITLOS said that a flag State must adopt the necessary measures including legislation, regulations, and administration, as well as enforcement steps to ensure that fishing vessels flying its flag are not involved in IUU fishing. The flag State must, for instance: prohibit fishing unless it is authorized by the coastal State; ensure vessels are properly marked; ensure flagged vessels comply with protection and preservation measures of coastal States; have enforcement mechanisms to monitor and secure compliance with its laws; have sanctions sufficient to deter violations and to deprive benefits accruing from IUU fishing; and investigate reports of suspected IUU fishing and take appropriate action, and report to the coastal State. The advisory opinion clearly elucidates also the responsibilities of coastal States to cooperate with each other to establish effective management regimes, including the necessary control and surveillance. The Review Conference should consider the importance and relevance of this advisory opinion to flag State responsibilities but also in that its findings on cooperation in the management of shared stocks, are critical.
- **amend decision making procedures.** The possibility of one member blocking a conservation measure stemming from a perceived conflicting national interest or some other reason at odds with international consensus continues to be a structural obstacle to reaching an effective agreement. The presumption should be that fishing cannot continue in the absence of effective conservation and management measures [80]. There should be consensus that opt-out provisions need to be clearly restricted, as already suggested in the IOTC Performance Review [108]

⁴ See http://www.fao.org/fileadmin/user_upload/legal/docs/037s-e.pdf (as of 1 August 2015).

- **transparency and access to information on fishing activities.** The Conference should assess transparency at all levels and access to information. It was evident in the workshop to discuss the implementation of UNGA resolutions relevant to the sustainability of deep sea fisheries [109], for instance, that environmental impact assessments were not being made public, and UNGA resolution 66/68 accordingly called for them to be made public. Progress has been made in making information on fishing activities available to RFMOs through ICCAT Recommendation on access agreements [110] and on vessel chartering [111], the IOTC Resolution on access agreements [112], or the WCPFC measure on a chartering notification scheme [113]. Data of crucial importance to scientific committees such as VMS data or data from dFADs buoys and ecosounders should be made available to the scientific community following pre-established procedures.
- **transparency and participation of civil society organizations should be ensured.** Some of the key areas where RFMO transparency is weakest include closed meetings and closed negotiations outside of a public meeting. For three consecutive years, 2013-2015, civil society organizations have formally written to the Executive Director of the WCPFC complaining about the continued lack of transparency in the Commission's processes generally, and specifically related to communications and information about intersessional work and meetings. A similar letter was sent to ICCAT in 2014. Substantial parts of the work of the WCPFC Technical and Compliance Committee are taking place behind closed doors [96]. At ICCAT it is becoming common that draft proposals for recommendations submitted for consideration by the Commission are not made public until the last days of the meeting, while negotiations on their content only take place among delegations, rather than in plenary sessions open to observers. These important shortcomings should also be discussed at the upcoming UNFSA resumed Review Conference.

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