

**Review of WCPFC FAD Management Plans Submitted by CCMs
Independent Review
Conducted by the Pew Environment Group**

Submission to the 7th Meeting of the Technical and Compliance Committee
September 2011
Pohnpei, Micronesia

Executive Summary:

CCMs with purse seine fisheries were required to submit FAD (Fish Aggregating Device) Management Plans by 1 July 2009, as required by Paragraph 23 of Conservation and Management Measure (CMM) 2008-01. Not only do FAD fisheries have a significant impact on juvenile bigeye stocks, their uncontrolled proliferation may have broader ecosystem impacts as well. In this regard it is critical that CCMs implement strategies to manage FADs, in addition to providing the Commission information on the extent of FAD use.

This document examines CCM compliance with the following requirements relating to FADs:

1. Timely submission of FAD Management Plans;
2. Thoroughness of the submitted FAD Management Plans; and,
3. Recent catches of bigeye tuna in CCM purse seine fisheries.

Based on the review of FAD Management Plans and catch data, the Pew Environment Group issues the following recommendations to TCC7:

- Urge the Commission to improve the language in CMM 2008-01, Paragraph 23 in the next CMM as the current language is contradictory.
- Clarify the requirements for FAD management plans. Call on the Scientific Committee (SC) to provide CCMs with a template for Plans to ensure consistency.
- CCMs without Plans should not be permitted to use FADs. Only 4 CCMs with purse seine fisheries submitted FAD management plans by the deadline.
- CCMs that increased the ratio of bigeye to skipjack catch in their purse seine fisheries since 2008 should be classified as out of compliance with CMM 2008-01 by the TCC.
- FADs not retrieved should be documented as lost or discarded fishing gear by observers, as required by Annex V of The International Convention for the Prevention of Pollution from Ships (MARPOL), and reported to the appropriate authorities.

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Introduction

Since the late 20th century, FAD use in the world's oceans has soared, particularly in the western and central Pacific Ocean. New technologies have allowed for their widespread use by industrial-scale purse seine vessels targeting tuna. Based on conservative estimates, over 20,000 drifting FADs are actively monitored by the global purse seine industry – the majority of which will remain in the ocean until removed or destroyed. While FAD fishing can be an efficient method for catching large schools of tuna, industrial-scale FAD fisheries can have significant adverse impacts on tunas, other species, and the ecosystem.

As required by Paragraph 23 of Conservation and Management Measure (CMM) 2008-01, all CCMs fishing on the high seas are required to submit plans to the WCPFC for the use of FADs by their vessels. The Plans shall include strategies to limit the capture of small bigeye and yellowfin tuna associated with fishing on FADs, including implementation of the FAD closure pursuant to paragraphs 13 and 19. Additionally, the plans that are submitted are required, at a minimum, to meet the suggested guidelines of Preparation for FAD Management Plans for each CCM. The deadline for submission of such plans was 1 July 2009.

This document examines the following:

1. CCM compliance with respect to paragraph 23 of CMM 2008-01, specifically with regards to the timely submission of plans;
2. Thoroughness of the submitted FAD Management Plans; and,
3. Recent catches of bigeye tuna in CCM purse seine fisheries.

Methods

We conducted an independent analysis of FAD management plans submitted by CCM's in conjunction with an analysis of catch statistics. Part One of the analysis evaluated whether CCMs submitted the plans by the deadline of 1 July 2009. These data were available on the WCPFC website (<http://www.wcpfc.int/mcs-scheme/conservation-and-management-obligations-other-data>). Part Two of the analysis evaluated the plans against the minimum recommended guidelines outlined in Paragraph 23 and Annex E of CMM 2008-01. Lastly, in Part Three, the ratio of purse seine caught bigeye to purse seine caught skipjack for the period 2007 – 2010 was analyzed to determine if the relative amount of bigeye caught by individual CCM purse seine fisheries decreased, increased, or remained stable in a response to CMM 2008-01. Data on FAD-specific sets versus unassociated sets was not available at the individual CCM level, which is why the analysis used overall purse seine catch data from the WCPFC Tuna Fishery Yearbook 2009 (2007-2009 data) and the CCM Annual Reports to SC7 (2010 data). A

table on the 2009 bigeye catch per purse seine vessel (calculated for each CCM) is also included in Part Three, and is also based on the WCPFC Tuna Fishery Yearbook 2009.

Part One: Timely Submission of FAD Management Plans

CCMs that submitted FAD management plans before the 1 July 2009 deadline	CCMs that have not submitted FAD management plans	CCMs whose FAD management plans have expired	CCMs that submitted FAD management plans after the deadline
Australia	China	Japan (expired January 2009)	European Union (27 October 2010)
Belize	Ecuador	New Zealand (expired January 2009)	
Chinese Taipei	El Salvador		
Federated States of Micronesia	Kiribati		
Japan	Republic of Korea		
New Zealand	Republic of Marshall Islands		
Papua New Guinea	Philippines		
Solomon Islands	USA		
	Vanuatu		

In summary, the EU submitted a late plan, New Zealand and Japan submitted interim plans which expired over 30 months ago (in January 2009) and China, Ecuador, El Salvador, Kiribati, Korea, Republic of Marshall Islands, Philippines, the USA and Vanuatu have yet to submit plans. The TCC should consider the total disregard for a WCPFC CMM requirement as a breach of compliance and should recommend actions to the Commission on how to remediate the situation as a matter of urgency.

Only four CCMs with significant purse seine fisheries in the Convention Area submitted plans in line with the time frame requirements of CMM 2008-01 (Chinese Taipei, Federated State of Micronesia, Papua New Guinea and the Solomon Islands).

Part Two: Gap Analysis of Plans against Annex E of CMM 2008-01

Criteria from Annex E CMM 2008-01	C-T	EU*	FSM	JPN**	NZ**	PNG	SI
Scope							
Vessel-types							
FAD types							
Max FAD numbers permitted							
Reporting procedures							
Catch reporting from FAD sets							
Minimum distance between FADs							
Incidental by-catch reduction and utilization policy							
Consideration of interaction with other gear types							
Statement or policy on "FAD ownership"							
Institutional arrangements for management of the FAD Management Plans							
Institutional responsibilities							
Application processes for FAD deployment approval							
Obligations of vessel owners and masters in respect of FAD deployment and use							
FAD replacement policy							
Reporting obligations							
Observer acceptance obligations							
Relationship to Catch Retention Plans							
Conflict resolution policy in respect of FADs							
FAD construction specifications and requirements							
FAD design characteristics (a description)							
FAD markings and identifiers							
Lighting requirements							
Radar reflectors							
Visible distance							
Radio buoys [requirement for serial numbers]							
Satellite transceivers [requirement for serial numbers]							
Applicable areas							
Details of any closed areas or periods							
Applicable period for the FAD-MP							
Means for monitoring and reviewing implementation of the FAD-MP							
Means for reporting to the Commission							

 = included in Plan  = not included in Plan

* FAD Management Plan submitted late

** FAD Management Plan expired January 2009

Criteria from Annex E CMM 2008-01	<i>China</i> ⁺	<i>Ecuador</i> ⁺	<i>El Salvador</i> ⁺	<i>Kiribati</i> ⁺	<i>Korea</i> ⁺	<i>RMI</i> ⁺	<i>Philippines</i> ⁺	<i>USA</i> ⁺	<i>Vanuatu</i> ⁺
Scope									
Vessel-types									
FAD types									
Max FAD numbers permitted									
Reporting procedures									
Catch reporting from FAD sets									
Minimum distance between FADs									
Incidental by-catch reduction and utilization policy									
Consideration of interaction with other gear types									
Statement or policy on "FAD ownership"									
Institutional arrangements									
Institutional responsibilities									
Application processes for FAD deployment approval									
Obligations of vessel owners,									
FAD replacement policy									
Reporting obligations									
Observer acceptance obligations									
Relationship to Catch Retention Plans									
Conflict resolution policy									
FAD construction specifications and requirements									
FAD design characteristics									
FAD markings and identifiers									
Lighting requirements									
Radar reflectors									
Visible distance									
Radio buoys									
Satellite transceivers									
Applicable areas									
Details of any closed areas									
Applicable period for the FAD-MP									
Means for monitoring and reviewing implementation of the FAD-MP									
Means for reporting to the Commission									

 = included in Plan  = not included in Plan

⁺CCM failed to submit FAD Management Plan

No CCM submitted the full information (based on the criteria) outlined in according Annex E of CMM 2008-01, which is a recommended minimum¹. The following are some of the consistent gaps in the FAD Management Plans that were submitted:

- None of the plans include a means to report back to the Commission. In order for the Commission to keep an inventory of FADs and to assess their ecosystem impacts, it is important for the Commission to have information on FAD deployment and location from CCMs.
- The EU, Japan and New Zealand do not include maximum FAD numbers permitted to be deployed. Research suggests that restrictions on the number of FADs can be effective management methods to reduce the negative impacts of FADs.
- None of the Plans meet the recommended minimum FAD construction specifications and requirements especially with regards to lighting requirements. FADs should be deployed with proper marking and identification equipment to accurately monitor their use.
- Only two CCMs mention a minimum distance between FADs, another minimum requirement under Annex E. Large numbers of FADs increase the likelihood of tuna encountering them which could alter the migratory paths of these fish and potentially affect characteristics such as growth and reproduction.
- PNG is the only CCM to include how they will monitor possible conflict between purse-seine fishing and longline fisheries arising from to the widespread use of FADs.

¹ This finding is similar to the results of the review conducted by the WCPFC.

Part Three: Evaluation of Catch Data

This table evaluates the ratio of bigeye to skipjack caught by CCM purse seine fleets in the years prior to the requirement to limit the catch of small bigeye tuna (2007 and 2008) as well as the years after the requirement was in place (2009-2010).

Table 1: Ratio of bigeye to skipjack in WCPO purse seine fisheries

CCM	2007	2008	2009	2010
China	1.6%	2.7%	2.3%	3.6%
Chinese Taipei	1.1%	1.9%	1.2%	2.1%
Ecuador	36.1%	29.9%	25.1%	NA
El Salvador	33.1%	20.0%	35.9%	30.4%
EU	21.4%	22.9%	19.4%	23.9%
FSM	1.7%	1.8%	3.2%	1.0%
Japan	2.4%	2.7%	1.8%	1.6%
Kiribati	2.5%	6.3%	3.5%	12.5%
Republic of Korea	0.8%	1.3%	0.8%	1.4%
New Zealand	1.9%	2.7%	0.8%	0.9%
Philippines	4.0%	1.3%	4.5%	3.4%
PNG	2.3%	3.2%	4.1%	NA
RMI	3.9%	5.8%	5.5%	3.2%
Solomon Islands	9.0%	22.2%	2.0%	0.4%
United States	4.0%	2.6%	2.5%	2.0%
Vanuatu	1.2%	1.9%	1.0%	NA

The ratio of bigeye to skipjack caught by different CCM purse seine fleets varies greatly, from 0.4% of the catch, to over 30%. While CMM 2008-01 calls on CCMs to implement strategies to limit the catch of small bigeye and yellowfin, it is clear from this analysis that this requirement has not been implemented by a number of CCMs. For instance, in 2008, the year before FAD management plans were required, the ratio of bigeye to skipjack caught by El Salvador's purse seine fleet was 1:5. In the last two years, this ratio has increased by more than 50%. This is one example of a CCM that has clearly made no effort to limit catches of small bigeye and yellowfin as required in CMM 2008-01. CCMs that have increased the ratio of bigeye to skipjack catch in their purse seine fisheries since 2008 should be classified as out of compliance with CMM 2008-01 by the TCC.

Clearly, different purse seine fleets have different fishing practices, and operate in different ocean areas, which results in different proportions of bigeye catch. The table below calculates the average bigeye catch per vessel for each CCM with purse seine fisheries based on 2009 data.

Table 2: Average Bigeye Catch per Purse Seine Vessel (2009 data)

CCM	BET Caught in Purse Seine Fishery (mt)	Purse Seine Vessels	Avg BET Catch per Vessel (mt)	Current FAD Management Plan
El Salvador	2162	2	1081.0	NO
EU - Spain	3816	4	954.0	YES
Marshall Islands	2248	6	374.7	NO
Kiribati	647	4	161.8	NO
PNG	6512	41	158.8	YES
United States	5931	38	156.1	NO
China	1535	12	127.9	NO
Ecuador	787	7	112.4	NO
Japan	3433	35	98.1	NO
FSM	545	6	90.8	YES
Korea	2140	27	79.3	NO
Philippines	1693	25	67.7	NO
Chinese Taipei	2113	33	64.0	YES
Vanuatu	351	6	58.5	NO
New Zealand	204	6	34.0	NO
Solomon Islands	193	7	27.6	YES

The data reveal a wide range in bigeye catch-per vessel. For example, purse seine vessels flagged to El Salvador catch, on average, 39 times as much bigeye as vessels from the Solomon Islands. While it appears that some CCMs have effectively limited their catches of bigeye by employing strict FAD management and other fishing techniques, several CCMs have considerable room for improvement. Interestingly, there is a wide range in average bigeye catchers per vessel even among CCMs with current FAD Management Plans. For example, EU-flagged purse seine vessels catch, on average, 15 times more bigeye than Chinese Taipei-flagged vessels.

The TCC should consider recommending a maximum average catch per vessel of bigeye for purse seine vessels and other effective measures to reduce bigeye catches, especially in ocean areas where bigeye are most abundant. As it stands, current requirements do not effectively limit the catches of small bigeye tuna by the purse seine fleets resulting in the continued overfishing of the stock in addition to lowering MSY.

Recommendations Regarding Compliance with FAD Management Plan Requirements:

Clearly, the WCPFC is concerned about the potential impacts of FAD fisheries and measures have been adopted to manage this gear type. However, CCM compliance with the FAD-related requirements established in CMM 2008-01 has been sparse, and purse seine catches of bigeye continue to threaten the species.

Based on the above review of FAD Management Plans and catch data, the Pew Environment Group makes the following recommendations. TCC7 should take action and/or make recommendations to:

- Urge the Commission to improve the language in CMM 2008-01, Paragraph 23 in the next CMM. The current language is contradicted by the language in Attachment E. Paragraph 23 reads “The Plans shall at a minimum meet the Suggested Guidelines for Preparation for FAD Management Plans for each CCM (Attachment E).” The opening language of Attachment E, however, is not as specific, and reads, “To support obligations in respect of FADs in CMM 2008-01, the FAD Management Plan for a CCM purse seine fleet to be submitted to the Commission could include, for example:...” If interpreted literally, FAD management plans could address all of the guidelines in Attachment E, or none of them. This is a significant weakness that must be addressed in the new CMM.
- Clarify the requirements for FAD management plans by asking the SC to provide CCMs with a template to ensure consistency. At a minimum, plans should include identification criteria, data reporting requirements, FAD limits per vessel and per EEZ, strategies on how to reduce the catch of small bigeye and yellowfin, measures that will be taken if these catches of small tunas are not reduced, and specify how the data will be shared with the Secretariat.
- Strengthen and clarify the language on FAD management plans in the new CMM so that the Commission and SC are regularly provided with more information for stock assessments and analyses of potential ecosystem-wide impacts FADs. Collecting such information would be cost-effective and easily collected by onboard observers.
- CCM non-compliance with the requirement to submit FAD management plans by 1 July 2009, as written in Paragraph 23 or CMM 2008-01, should be reviewed by the TCC. As a consequence, CCMs that have not submitted FAD management plans should not be permitted to use that gear. Additionally, those CCMs that have not submitted FAD management plans, or whose plans have expired, should be required submit them by the 2011 annual meeting.
- CCMs whose purse seine fleets have increased the ratio of bigeye to skipjack catch since 2008 should be classified as out of compliance with CMM 2008-01 by the TCC. In addition to resolving the non-compliance, CCMs should be required to immediately implement effective strategies to decrease catches of small bigeye and yellowfin. The TCC should also recommend effective measures to the Commission that would decrease catches small yellowfin and bigeye tuna by the purse seine fleet.
- FADs not retrieved should be documented as lost or discarded fishing gear by observers, as required by Annex V of The International Convention for the Prevention of Pollution from Ships (MARPOL). The SC should share this information in its annual reports in addition to sharing it with the proper authorities of the respective CCMs.
- The WCPFC Secretariat should work with satellite buoy operators to ensure the numbers of FADs reported as deployed, recovered, and lost by observers is consistent with their records.