Joint t-RFMO FAD Working Group meeting **Doc. No. j-FAD_09/2017**
April 5, 2017 (9:57 AM)

Original: English

ADOPTION LEVELS OF ENTANGLEMENT-REDUCING FAD DESIGNS BY TUNA PURSE SEINE FLEETS IN DIFFERENT OCEANS

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Extended abstract

Traditionally drifting FADs were constructed with netting to cover the floating raft and formed most of the underwater hanging structure. This net was recycled from old tuna purse seine nets, which have a large stretched mesh (e.g. > 3 inches). Unexpected high shark entanglement levels in FADs were found in a study conducted in the Indian Ocean at a time when loosely hanging panels of wide-mesh net were the norm, Scientists and fishers from many fleets have taken action to mitigate the problem caused by High Entanglement Risk (HER) FADs. Since 2010, large-scale pilot trials by the EU tuna purse seiner fleets to move away from HER FADs, fomented by industry-scientist participatory projects (e.g. MADE, Ecofad, ISSF Skipper Workshops) led to a voluntary shift towards FAD designs which minimized chances of "ghost fishing" of sharks, and turtles. In addition, acceptance levels for the idea of adopting Non-Entangling FADs (NEFADs) increased in many fleets, as skippers became more familiar with alternative FAD designs and learned that tuna catches for HER and NEFADs were equivalent. The need to limit the impact of FAD entanglement is further reinforced by the fact that numbers of FADs in all oceans have been increasing in the last decade.

In recent times, there have been substantial advances in the application of FADs that minimize entanglement. At present ICCAT has adopted measures that requires the use of non-entangling FADs (NEFADs) since January 2017, meanwhile IOTC regulations have provided for a gradual adoption of NEFADs from 2014 onwards, and IATTC encourages the utilization of NEFADs. The only tuna RMFO which has not explicitly advocated the adoption of NEFADs, despite their demonstrated conservation benefits of this design, is the WCPFC. This document describes the use of types of FADs according to their entanglement risk in different fleets of the world. The information is based on anonymous captain and navigator anonymous questionnaires and open question discussions with many fishers attending International Seafood Sustainability Foundation (ISSF) Skippers' Workshops for fleets including Spain, France, Ghana USA, South Korea, China, Taiwan, Indonesia, Peru, and Ecuador. ISSF scientists were also able to contrast some of this information through available observer information, research cruises, or vessel visits at ports where many of the FADs are constructed nowadays. Implementation of Lower Entanglement Risk (LER) FADs (i.e. FADs made with small mesh netting or netting tightly tied into bundles) and NEFADs (i.e. no netting used in their construction) is practically complete in the Indian and Atlantic Ocean, and is being increasingly adopted by fleets in the Eastern Pacific Ocean. In addition, The LER and NEFAD designs used by most fleets are inexpensive as for example they either use the same materials, like in FADs with netting tied into bundles, or require a lower amount of materials, like only ropes and no raft cover for NEFADs. In other instances, canvas materials or cheap second hand small mesh nets for small pelagics are used. According to skippers' comments, they have stopped seeing turtle or shark entanglements since they use these adapted FADs. Even if this general perception by fishers is true, scientific trans-oceanic studies that evaluate shark entanglement rates are lacking. Especially those including examination of "cryptic" entanglement events that go unobserved, as sharks may entangle in FADs only for a brief period of time (e.g. few days) before falling off. Also needed is research to evaluate if the rate of turtle or shark entanglement in LER and NEFADs is significantly different. These two categories may perhaps be an artefact and both could fall under the label of NEFADs if proven to have similarly low entanglements. This knowledge may also aid in the harmonization of standards and a clear definition of NEFADs across RFMOs.

At present only FADs in the WCPO are mostly of the HER type, made with wide mesh netting. In this Ocean FADs tend to be deep (e.g. 40-80 m), which means more entangling netting material is utilized. Note that FADs with modifications to reduce entanglement have continued to work and catch tuna well in three oceans already, so there is no apparent reason why drifting LER and NEFADs would not work in the WCPO. In fact, anchored FADs by WCPO fleets like Indonesia or Philippines are prime examples of NEFADs, as they are constructed with zero netting. Given that the WCPO is the largest tuna fishing region in the world and many inter-island regions are home to key shark populations, it would be advisable to move away from potentially entangling-FAD designs.

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