Working Paper for Evaluating the impact of Reducing FAD fishery on MSY
(prepared by Japan)

Allocation of TAC for Yellowfin or setting catch limits of Yellowfin by CPC would be one of the most difficult negotiations. It becomes more challenging when the SC recommends decreased TAC since CPCs then play a zero-sum game in securing their shares of the TAC.

For this reason, Japan believes that the level of TAC, in other words MSY, needs to be increased so that CPCs would have a better chance in agreeing on the allocation of TAC or catch limits by CPC thereby the IOTC could maintain the actual total catch within the SC advice.

It is widely recognized that FAD fishery undermines the productivity of the stock because it catches many juvenile fish. Thus, Japan proposes to task the SC to examine to what extent MSY could be increased by replacing FAD fishery with free school fishery. Also, the SC is requested to provide management advices on necessary FADs restrictions, *inter alia*, limit of FADs set, to achieve such increased MSY.

The proposed text for a Resolution is as follows:
The SC shall develop a table for consideration by the Commission that quantifies the expected impact on MSY and Bmsy for yellowfin resulting from replacing fishing mortality of FAD fishery with free school fishery. The SC shall also provide advice on FADs management options, inter alia, limit on FADs set, necessary to achieve such replacement of fishing mortality of FAD fishery.

An image of the table to be developed by the SC is as follows:

Treatment	Percent change in MSY	Percent change in Bmsy	Necessary FADs control measure(s)
10% replacement	*XX*%	*YY*%	*ZZ%* reduction of FADs set Limit on FADs set: *AA sets*
20% replacement			
50% replacement			
100% replacement			

Similar analyses were conducted by the SCRS of ICCAT in 2018 where the impact of reducing fishing mortality of FAD purse seine and reallocating that mortality to other fleets was examined. The results of the analyses are reproduced below. For example, if the fishing mortality of FADs+Ghana is reduced 100% and reallocated to PS Free School, Baitboat and Longline, MSY would be increased by 46%. This is because the catches of juvenile fish by FADs+Ghana is replaced by the catches of larger fish by other types of fisheries, thereby more fish can contribute to reproduction.

Table 19.4.4. Percent change in yellowfin tuna maximum sustainable yield associated with a reallocation of fishing mortality from an individual fleet to the other fleets. Scenarios examined included a 10%, 20%, 50%, and 100% reallocation of F from purse seines on free schools, fishing on FADs+Ghana, baitboats, and longlines. Under the current fleet allocation (i.e. status quo) the MSYs estimated for yellowfin using the DST were 123,765 t and 126,314 t for Run 5 and 7, averaged.

Yellowfin averaged Maximum Sustainable Yield				
Treatment	*PS Free School*	*FADs+Ghana*	*Baitboat*	*Longline*
10% reduction	-2%	6%	0.0%	-0.6%
20% reduction	-4%	12%	0.0%	-1.3%
50% reduction	-9%	27%	-0.1%	-3%
100% reduction	-19%	49%	-0.2%	-7%

(p.284 ICCAT SCRS Report)