

MEMORANDUM ON REGULATORY MEASURES FOR PURSE SEINE FISHERIES IN THE WESTERN TROPICAL INDIAN OCEAN

Ziro Suzuki

(National Research Institute of Far Seas Fisheries)

ABSTRACT

In this document catches of yellowfin by size and weight category are analyzed paying special attention to the intermediate sizes rare in the PS catch. Three weight categories have been established (<10 Kg., 10-30 Kg. And >30 Kg.) in order to track the different components of the stock: juveniles (32% of the catch), preadults (17%) and adults (51%). Regarding seasonality, intermediate sizes are mainly caught from July to September (36.4% of the annual catch). By area these sizes are more abundant in Somalia, NW Seychelles and Arabian Sea areas. Considering the fishing mode, the 55.2% of its catches come from floating objects. Three hypotheses are postulated to explain the low present of this stock component in the purse seine catch: migration, behavior and two stanza growth pattern. The document also presents changes in selectivity due to exploitation and especially to the increasing purse seine effort particularly on floating objects.

PRESENT STOCK STATUS OF THE INDIAN

BIGEYE TUNA

Report of the 4th WPTT summarizes the stock status and gives technical advices regarding to the management measures of the Indian Ocean bigeye tuna (IOTC 2001). Although there remain several uncertainties in the stock assessment, it concludes that the stock is being overfished and reduction of catch is necessary from both purse seine and longline fisheries, two major components of the bigeye catch, to keep the fisheries operating near the MSY level.

TECHNICAL ADVICES FROM THE 4TH WPTT TO REDUCE BIGEYE CATCH WITH PURSE SEINE FISHERY

In the report, it is stated that the reduction of the bigeye catch should take into account of multi-species nature of the fisheries, both for purse seine and longline fisheries. The multi-species problem related to the juvenile bigeye by the purse seine fishery has become more and more serious due to increase of non-targeted juvenile bigeye by this fishery

with more frequent use of the FADs. This is a common problem throughout the world tropical tuna purse seine fisheries. Regulatory measures such as time area closure for purse seine and other surface fisheries (ICCAT), catch limit for juvenile bigeye on FADs (IATTC) are currently in effective. Capping of fishing mortality rate of bigeye by purse seine fishery was recommended for western and central Pacific region by relevant scientific organization, i.e., Standing Committee on Tunas and Billfishes (SCTB) which meeting was held in 2001.

Voluntary time area closure by major purse seine industries started from 15 Nov. 1998 through 15 Jan. 1999 in the Indian Ocean but it ceased after that. The WPTT stated that the time of the voluntary measures chosen by the purse seine fisheries was inadequate as the choice of months for moratorium, apparently by the reason that during the moratorium period, the peak of the juvenile bigeye catch, mainly Aug.-Nov. period, was not covered. The actions taken by other areas makes sharp contrast with the case of the Indian purse seine fishery since no further analyses were

presented and no discussion took place in the 4th WPTT for potential regulatory measures of FAD fishery in the Indian Ocean.

INFORMATION ON CONSEQUENCE OF MORATORIUM FOR PURSESEINE OPERATION IN THE INDIAN OCEAN

The WPTT identified several difficulties in assessing effectiveness of potential options of moratorium which include the lack of adequate biological and statistical data as well as lack of reliable stock assessment (IOTC 2000 a). Despite of these difficulties, east of Somali area was chosen for best potential areas of time area closure and several combination of time and area closure for the purse seine fishery with respect to merit (reduction of juvenile bigeye) and demerit (reduction of skipjack and yellowfin) incurred from adopting those scenarios. In all options analyzed, major months of high bigeye catches are included. The report summarizes that short-term consequences of such moratorium could reduce total tuna catches in a range between 10,000 and 40,000 tons and the fishing mortality on juvenile bigeye could be reduced in a range between 20 and

40 %. In the report of 3rd Scientific Committee (IOTC 2000 b), it was considered that a shorter moratorium based on larger (0-10N, 20-60E) of the two areas presented is more likely to be effective than a longer one based on the smaller area (0-5N, 20-60E).

NEED FOR IMPLEMENTATION OF MORATORIUM FOR THE PURSE SEINE FISHERIES

This year's stock assessment indicates that catch reduction from both major fisheries is necessary. Supplemental projection which is going to be presented to the Scientific Committee (Nishida et al. 2001) shows that a level of 20 % catch reduction from whole fishery is necessary to keep the stock above MSY level. A corresponding amount of reduction of bigeye caught by the purse seine is about 8,000 tons. In this respect, the closest catch with this number in various options of time-area closure (IOTC 2000b, Appendix Table IV) is 5,700 tons which is the option of longest time period closure although still smaller than desired reduction. Therefore, if we choose best option from the analysis now available to us, it is the option covering Aug.-Nov. months and 0-10N and 20-60E area.

REFERENCES

IOTC 2000A: Report of the Working Party on Tropical Tunas, Third Session of the Scientific Committee, Mahe, Seychelles, December 2000

IOTC 2000B: Report of the Third Session of the Scientific Committee, Mahe, Seychelles, December 2000.

IOTC 2001: Report of the Working Party on Tropical tunas, Mahe, Seychelles, June 2001

NISHIDA, T., H. SHONO AND Z. SUZUKI: Note on supplemental stock projection analysis for bigeye tuna in the Indian Ocean, Paper presented to the 4th Scientific Committee, Seychelles, December 2001