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Pelagic Fish (Southern) Committee

THE STATE OF THE STOCKS OF TUNA IN THE ATLANTIC AND INDIAN OCEANS

Summary of Report of the

Meeting of Group of Experts on Tuna Stock Assessment

Miami, U.S.A., 12th-16th August 1968

by

J. A. Gulland^{x)}



Summary

A meeting of experts in tuna stock assessment met in Miami in August 1968. Concerning the Indian Ocean, they concluded that the stocks of yellowfin, albacore, bluefin and bigeye, available to the long-line fishery were all heavily exploited, and with the possible exception of bigeye increased long-line fishery would give little or no increase in total catch, and would certainly decrease the catch per unit effort. The main opportunity for increasing tuna catches is by fishing for skipjack. Tuna statistics should be improved.

Introduction

A meeting of a group of experts in tuna stock assessment was arranged by FAO, under the auspices of the Expert Panel for the Facilitation of Tuna Research, and took place in the Tropical Atlantic Biological Laboratory of the U.S. Bureau of Commercial Fisheries in Miami from 12th-16th August 1968.

Those taking part were as follows:-

J.C. Dao	Rennes, France
J.C. Le Guen	Pointe Noire, Congo (Brazzaville)
B.J. Rothschild	Honolulu, U.S.A.
J. Joseph	La Jolla, U.S.A.
M.B. Schaefer	Washington, D.C., U.S.A.
A. Suda	Shimizu, Japan
J.P. Wise	Miami, U.S.A.
I. Yamanaka	Shimizu, Japan
J.A. Gulland	FAO, Rome, Italy (Convenor and Chairman)

The detailed report of this meeting is still being prepared, but a summary of the conclusions, as agreed by the members of the Group, are given in this paper.

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Summary of Report

The Group considered long-line and surface fisheries in the Atlantic and Indian Oceans for yellowfin tuna, albacore, bigeye tuna, the bluefin tunas and skipjack tuna. Billfishes were not considered at this meeting but, since they are a significant component of long-line catches they should be considered in detail as soon as practicable. Stock separation, catch and effort data, biological data, and the status of the stocks were examined. Certain similarities in the status of the stocks in the Atlantic and Indian Oceans were noted - in fact, there are many parallels with the Pacific Ocean. Preliminary conclusions for the areas of interest follow.

Atlantic

The Fisheries

The major Atlantic tuna fisheries are the long-line fisheries, chiefly for yellowfin, albacore, and bigeye, which now cover most of the tropical and temperate waters of the Atlantic, and surface fisheries (mainly purse seine and live bait) for yellowfin, skipjack, and bigeye tunas along the West African coast, and trolling and live bait fishing in the region of the Bay of Biscay for small albacore and bluefin tuna. The Japanese long-line fishery started in 1956 and the effort by this fishery increased continuously until 1965; some decrease in Japanese fishing in most recent years has been offset by increased fishing by long-liners from South Korea and China (Taiwan). The long-line fishery initially concentrated on yellowfin, but later, as yellowfin abundance decreased, attention was transferred to albacore. The effort in the surface fisheries is also increasing, the French and Spanish vessels being joined by vessels from the U.S.A., Japan and West African countries.

The State of the Stocks

The stocks of large yellowfin on which the long-line fishery is based have been greatly reduced by fishing. Any further increase in long-line fishing would at best increase the total long-line catch only marginally and might possibly decrease the total long-line catch; further, increased fishing will certainly continue to decrease the catch per unit effort.

The surface yellowfin fishery is based on smaller fish. This fishery has reduced the recruitment to the yellowfin long-line fishery. The presence of the surface fishery may increase the total Atlantic yellowfin catch and is unlikely to decrease it. However, if the minimum size of fish taken in the surface fishery is decreased, the total catch will almost certainly be decreased.

The long-line albacore and possibly also bigeye stocks are also heavily fished. Increased long-line fishing would give little or no increase in albacore catches, though it may be possible to increase bigeye catches. Increased fishing will certainly decrease the catch per unit effort, particularly for albacore. The relation between the surface and the long-line fisheries for albacore in the North Atlantic is unknown.

The bluefin tuna stocks do not appear to be large; the group of small bluefin fished off New England is certainly small and heavily exploited. Less is known for certain concerning the abundance of the group of bluefin supporting the larger fisheries off western Europe.

The skipjack stock appears to be large, and the present small catches can be increased.

Indian Ocean

The history of the long-line fishery is similar to that in the Atlantic and the Pacific - increasing Japanese fishing since about 1952, with more recently increased fishing by China (Taiwan) and South Korea. Initially, the Japanese catches mainly consisted of yellowfin, but now contain approximately equal catches of yellowfin and bluefin, and rather less albacore and bigeye. The major surface fisheries are on the eastern boundary of the Indian Ocean - for bluefin off Australia, and for yellowfin and other species around Indonesia. Another surface fishery is now developing off Somalia.

The yellowfin stocks in the Indian Ocean are probably independent of those in the Atlantic, but there is apparently some intermixing of albacore, bigeye, and bluefin around South Africa.

The state of the stocks is similar to those in the Atlantic. The stocks of all four species fished by the long-liners are heavily fished, and increased long-line fishing will not appreciably increase (and may decrease) the total yellowfin, bluefin, and albacore catches, though some increase in the bigeye catches may be possible. Increased fishing will certainly reduce the catch per unit effort of all three species. The effects of the surface fishery for bluefin on the long-line fishery is not known.

The major opportunity for increasing appreciably the Indian Ocean tuna catch is for skipjack, and these stocks appear to be large. Increased catches might result from surface fisheries of bluefin and yellowfin, but the group lacked information to examine these possibilities.

Statistics

There is an urgent need for an improvement in the statistics of total landings, species composition, and fishing effort. Because of the nature of the fisheries - long-range vessels and vessels landing in foreign countries - the collection, tabulation, and publication of detailed statistics might be better done for the world as a whole, rather than for each ocean separately. The recommendations in the body of this report and in the reports of the Expert Panel for the Facilitation of Tuna Research give details of the requirements.