WP 3

THE SKIPJACK FISHERIES OF THE INDIAN OCEAN

R.E. Kearney and W.L. Klawe

The landings of skipjack from the Indian Ocean (tables 1 and 2) are dominated by surface fishery catches from the central part of this ocean (that is around the Maldives, Sri Lanka, India and Pakistan) and from the eastern extremities (i.e. around Indonesia). Even though there is currently no substantial skipjack fishery in the western Indian Ocean the potential for basing viable live bait and pole fisheries in this region was substantiated by the relatively high catch rates achieved from a base in Madagascar during 1973 and 1974.

While there have been numerous fishery development programmes undertaken to increase the skipjack fisheries in the Indian Ocean intensive research effort has been minimal and little is really known of the magnitude of the total resource or its present state of exploitation. It is however, as for the Pacific Ocean, assumed that the skipjack represents a major fisheries resource which is as yet substantially underexploited.

While there are few research findings on Indian Ocean skipjack which are likely to be of benefit as guidelines for future research on a world-wide basis the methods and techniques used to harvest skipjack are in many cases unique and their possible applicability to other areas should be considered. The largest Indian Ocean skipjack fishery is that based in the Maldives where a non-mechanized canoe fishery produces almost 20,000 tonnes of skipjack annually. While the basic fishing technique utilizes live bait and pole and as such does not provide revolutionary ideas on skipjack fishing, a catch of tuna of 20,000 tonnes is not achieved by non-mechanized craft anywhere else in the world. Perhaps more importantly the baitfish resources of the Maldive Islands are considered to be minimal, as for all atoll islands, and yet this very substantial skipjack catch is taken.

Returns from the sale of skipjack processed into dried "Maldive Fish" (similar type product to the Japanese "arabushi") account for more than 90% of the foreign exchange earnings of the Maldive Islands even though the current price of "Maldive Fish" is low by world fishery product standards. While the low capital return from the Maldive skipjack fishery indicates that the techniques used may not be directly applicable in toto to other areas, there are probably some aspects of this operation, particularly baitfish utilization, which could be adapted to assist skipjack fisheries development in other developing countries.

The skipjack fishery in Sri Lanka is also unique in that a large part of the catch is taken by mesh netting, a technique not normally used for the capture of this species. Skipjack are also captured in the Indian Ocean by mesh netting in India and I believe Pakistan.

The Indian Ocean skipjack fisheries might therefore provide working examples of alternative methods of establishing similar fisheries in other parts of the world, particularly the Western Pacific.

There appears little doubt that the potential total yield of skipjack from the Indian Ocean is much greater than the catch currently being taken. In addition to the established fisheries the potential around Madagascar has already been proven and a skipjack fishery in the Seychelles is currently being developed. Additionally the waters off north-western Australia are considered to harbour substantial skipjack resources which are at present completely untapped. The available data are completely inadequate to estimate the resource potential and estimation of potential total yield is further complicated by the possible restriction of effort by the high cost of operating such open-ocean fisheries as those for skipjack, nonetheless it is probable that the harvest of skipjack from the Indian Ocean in future years will increase at least several fold over present levels.

TABLE I

1974 CATCHES OF TUNA IN FAO STATISTICAL AREA 51

	Auxis spp	Euthynnus affinis	Katsuwonus pelamis	Thunnus alalunga	T. albacares	T. maccoyii	T. obesus	T. tonggol	Various tunas	TOTAL
BAHRAIN	...	...	--	--	...	--	--	--		
BRITISH INDIAN OC. TERR.	--	--	--	--	--	--	--	--		
COMORO IS.	...	...	...	...	...	--	--	--		
EGYPT	...	...	...	--	...	--	--	...		
ETHIOPIA	...	...	...	--	...	--	--	...		
FR.TR.AFARS & ISSAS	...	...	...	--	...	--	--	...		
INDIA	160 F	240 F	3,840 F	...	160 F	--	...	...		4,400
IRAN	--	--	--	--	...	--	--	--		
IRAQ	--	--	--	--	--	--	--	--		
ISRAEL	...*	...*	...	--	...	--	--	...		
JAPAN	--	--	23	708	1,828	5,687	2,752	--		10,998
JORDAN	--	--	--	--	--	--	--	--		
KENYA	...	...	...	...*	...*	--	...	--		
KOREA REPUBLIC	--	--	72	9,206	11,563	182	13,358	--		34,381
KUWAIT	--	--	--	--	--	--	--	--		
MADAGASCAR	...	...	8,956	...	...*	--	...*	--	2,227	11,183
MALDIVE IS.	5,900	800	24,00	--	4,500	--	...	--		35,200
MAURITIUS	...	...*	...	...	...	--	--	--		
MOZAMBIQUE	...	...	...	...	...	--	--	--		
OMAN	--	--	--	--	--	--	--	--		
PAKISTAN	5,500 F	100 F	5,800 F	...	200 F	--	...	...		11,600
QATAR	--	--	--	--	--	--	--	--		
REUNION	...	...*	...	...*	...*	--	...*	--	482	482
SAUDI ARABIA	...	...	...	--	--	--	--	--		
SEYCHELLES	...	350	50	...	150	--	--	--		550
SOMALIA	...*	...*	100	--	1,000	--	...	...*		1,100
SOUTH AFRICA	...	...	...	...	...	...	--	--		
SRI LANKA	3,800 F	2,000 F	10,500 F	...	5,100 F	--	100	--		21,500
SUDAN	...	...	...	--	...	--	--	...		
TAIWAN	--	--	...	6,518	1,537	21	1,681	--		9,757
TANZANIA	...	...	...	...	...	--	--	--	800 F	800
USSR	--	--	--	900 F	900 F	--	600 F	--		2,400
UNITED ARAB EMIRATES	--	--	--	--	--	--	--	--		
YEMEN ARAB REP.	...*	...*	260	--	...	--	...	...		260
YEMEN DEMOCRATIC	...*	...*	...*	--	...	--	...	...	8,900 F	8,900
TOTAL	15,360	3,490	53,601	17,332	26,938	5,890	18,491		12,409	153,511

TABLE II

CATCHES OF TUNA IN FAO STATISTICAL AREA 57

	Auxis spp	Euthynnus affinis	Katsuwonus pelamis	Thunnus alalunga	T. albacares	T. maccoyii	T. obesus	T. tonggol	Various tunas	TOTAL
ASHMORE & CARTIER IS.	--	--	--	--	--	--	--	--		
AUSTRALIA	...	...	100 F	...	100 F	7,300	...	...		7,500
BANGLADESH	500	...*	800 F	--	...*	--	...	...		1,300
BURMA	...	...	...	--	...	--	--	...		
CHRISTMAS IS. (AUST)	--	--	--	--	---	--	--	--		
COCOS IS. (KEELING)	--	--	--	--	--	--	--	--		
INDIA	40 F	60 F	960 F	--	40 F	--	--	...		1,100
INDONESIA	4,000 F	4,500 F	4,000 F	100 F	2,500 F	0	300 F	3,500 F		18,900
JAPAN	--	--	4	1,549	2,209	10,842	3,115	...		17,719
KOREA REPUBLIC	--	--	...	...*	...*	...*	...*	...		
TAIWAN	--	--	...	9,368	2,339	22	3,341	--		15,070
TOTAL	4,540	4,560	5,864	11,017	7,188	18,164	6,756	3,500		61,589

ABBREVIATIONS USED IN TABLES I AND II

-- catch known, or assumed, to be nil

0 catch known to be small in relation to total catch of given species from given area

... catch unknown but assumed to be insignificant in relation to total catch of a given species from given area

...* catch unknown but assumed to be significant and special effort should be made to obtain catch data

F estimate

FIG.1 Areas of Skipjack Fisheries in the Indian Ocean