

ESTIMATION ON THE FISHING EFFORT OF JAPANESE BAITBOAT FISHERY  
BASED AT TEMA

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**Introduction** The fishing effort of the Japanese baitboat fishery in the Atlantic has been expressed by the number of successful fishing days. At the SCRS of 1979 Meeting, it was recommended that this fishing effort be revised into actual "Fishing days" inclusive of searching days to obtain better estimates of the effort. Since the record of searching days has not been indicated in the log book reports available for analysis at the Far Seas Fisheries Research Laboratory (FSFRL), it is not possible to recompile the effort statistics, so that some attempt was made to estimate "Fishing days" in this report.

**Data source and explanation** Using the reports presented to FSFRL, various statistics were extracted as shown in Table 1. These data do not include the operations in the western Atlantic. The information on the number of days for bait-fishing has been available in the logbook reports for some of the vessels since 1976 (Table 2).

**Days at sea:** Days at sea between departure and arrival at base port.

**Successful fishing days:** Days when any amount of catch is realized. This has been unit of fishing effort for Japanese baitboat fishery in the Atlantic.

**Bait-fishing days:** Days for catching bait fish at the bait fish ground, which is located at the area to the west of Tema as far as several hours of running of vessels on the average. In general, baitfish can survive in the baitfish hold on board for less than 10 days. The number of days for bait-fishing per trip is made available for the years 1976-78 as shown in Table 2, and for other past years, 3 days and 4 days per trip were given to estimate the bait-fishing days for two periods, 1969-72 and 1973-75, respectively, considering the trip length of each period.

**Days for navigation:** The baitboat fishing ground in the Gulf of Guinea can be totally covered within a couple of days of running by baitboats based at Tema. Taking into account of the recent furthering offshore fishing ground of the fishery to avoid the catching of small yellowfin tuna (Kume, 1978), the number of days for navigation was given 1 day per trip for the years 1969-75 and 2 days per trip for 1976 onward.

**Searching days:** Days for searching fish schools and no resultant catch achieved, and no information has been available for the Japanese baitboats based at Tema. In this report, searching days are considered as days excluding successful fishing days, bait-fishing days and days for navigation from days at sea.

"Fishing days": Successful fishing days and searching days combined.

Discussion

1. Annual estimated searching days per trip resulted in less than 3 days without any long-term trend detectable. The fishermen engaging in the Gulf fishery for a long time endorsed the results including information on bait-fishing days' trend and the data on searching days. Considering together that the fishing grounds have been so close to the base ports, the findings appear to hold reality.

2. The annual proportion of the successful fishing days to estimated "Fishing days" has fluctuated within the range of 80-95 % and no one-way trend can be detected. Using these factors, the fishing effort in terms of successful fishing days can be converted to "Fishing days" inclusive of searching days. It is considered in addition that successful fishing days statistics used as unit of fishing effort for the baitboat fleet in the Gulf of Guinea are still comparative to "Fishing days".

Reference

Kume, S. 1978 : Japanese tuna fisheries and research in the Atlantic, 1976-77. ICCAT Report for biennial period, 1976-77.

Table 1. Statistics on the fishing effort of the Japanese baitboat fleet based at Tema, 1969-1978.

YEAR	Number of vessel	Number of trip	Days at sea	Days at sea / trip	Successful fishing days	Estimates			
						Bait-fishing days	Days for navigation	Searching days	"Fishing days"
1969	6	104	1,800	17.3	1,099	312	104	285	1,384
1970	6	113	1,854	16.4	1,264	339	113	138	1,402
1971	7	119	1,987	16.7	1,407	357	119	104	1,511
1972	14	146	2,472	16.9	1,762	438	146	126	1,888
1973	18	208	4,683	22.5	3,083	832	208	560	3,643
1974	24	228	5,174	22.7	3,356	912	228	678	4,034
1975	20	43	855	19.9	593	132	43	87	690
1976	14	162	3,956	24.4	2,768	697	324	167	2,935
1977	18	181	4,553	25.2	3,087	815	362	289	3,376
1978	19	143	3,551	24.8	2,323	772	286	170	2,493

Table 2. Recorded number of the bait-fishing days for Japanese Tema based bait boat, 1976-78.

YEAR	Number of vessel	Number of trip	Days at sea	Bait-fishing days
1976	9	102	2,634	434
1977	9	84	2,231	376
1978	10	85	2,188	457