

INTRODUCTION OF MECHANICAL WATER SPRAYERS FOR TUNA FISHING

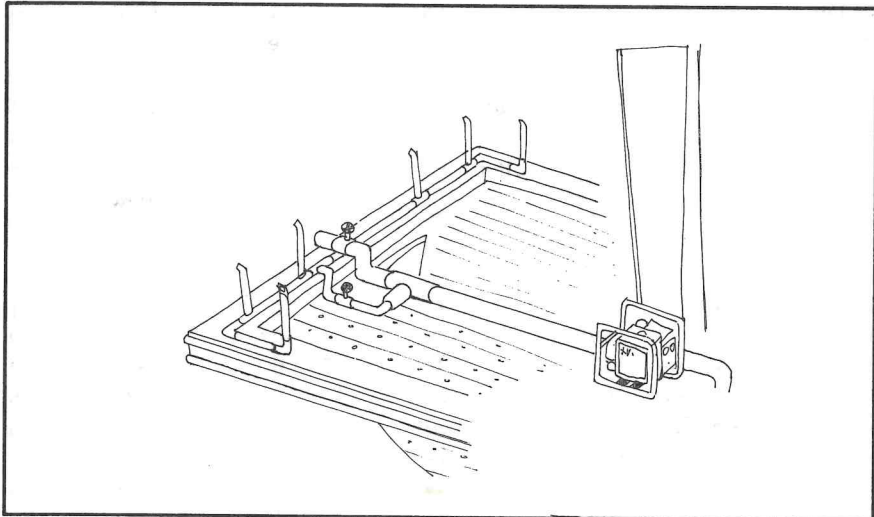
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The pole and line tuna fishery is an important source of employment in the Maldives. Infact traditionally it was the only employer of significance. However, over the last 15 years or so the development of employment opportunities in other sectors such as tourism, government and construction has led to a significant decrease in the number of pole and line fishermen, despite the rapidly increasing population. This has happened at a time when the Government of Maldives is actively trying to increase tuna production, both to feed the growing population and to generate higher export earnings. Fortunately, the mechanization of the pole and line fleet, which started in 1974, has so far been a major factor in increasing fish catches in spite of falling numbers of fishermen. There are two main reasons for this. First, the greater speed and manouverability of mechanized vessels over sailing ones greatly increases their ability to catch tunas. Secondly, the use of an engine reduces the numbers of crew required, as extra men are not needed to handle the sail or to bail. Despite these advantages, owners of mechanized fishing boats on some islands are finding it increasingly difficult to maintain full crews, typically about 8 men per boat. During 1990 a new development started which allows further reductions in crew size: the use of mechanical sprayers.

During pole and line tuna fishing operations two men sit on the stern of the fishing platform, either side of the rudder, and spray water over the fishing area behind the boat. They use traditional water flickers (fenfulhafi) made from the flower guards of coconuts (fulhafi). (Water spraying hides the fishermen from the tuna, and also imitates the effect of fleeing baitfish, exciting the tuna into a feeding frenzy. The use of mechanical sprayers effectively allows the boats to operate with two fewer crew. This makes it easier for boat owners to man their vessels, and also increases the shares for the remaining crew.

When mechanization was first introduced an attempt was made to use the engines for spraying, but the results were unsatisfactory. The Ministry of Fisheries' long range fishing vessel 'Miyavali' (built with UNDP technical assistance) carried out experimental fishing operations during 1982-1986. This vessel was equipped with a mechanical sprayer for pole and line tuna fishing. 'Miyavali' operated in many locations throughout the Maldives and so many fishermen were able to see the sprayer in action. The increasing scarcity of fishermen has prompted some boat owners to reexamine the possibilities of mechanical spraying. During early 1990 20 small petrol pumps were imported to R. Kandholhudhoo for spraying. They proved very effective and now most boats at Kandholhudhoo have sprayers installed. Their use is spreading to other islands in Raa Atoll, for example on Alifushi four boats now have sprayers installed. During periods of poor fishing (when crew shares are likely to be small) some boats now go out with only four crew members. The introduction of mechanical sprayers is a significant step in the development of the Maldivian tuna fishery and it is anticipated that their use will soon spread to Male' and other islands.

The layout of pump and spraying pumps, as currently used at Kandholhudhoo, is shown in the accompanying diagram.



Schematic diagram of mechanical water spraying system fitted on a Second Generation Dhoni

دَسَو فِشَرِیَس دَی مَکَوتِی رِیَسَہ ۱۹۸۹

BASIC FISHERIES STATISTICS 1989

۱۹۸۵ ۱۹۸۹ ۱۹۸۷ ۱۹۸۶ ۱۹۸۵

FISHERMEN AND FISHING FLEET 1985 - 1989

		1985	1986	1987	1988	1989
Fishermen	دَسَو فِشَرِیَس	19,671	22,245	22,387	21,880	22,025
Mechanized dhoni	مِکَیَنِزِی دَہُونِی	1,202	1,358	1,574	1,558	1,647
Sailing mas dhoni	سَیْلِی مَاس دَہُونِی	561	507	486	449	375
Sailing vadhu dhoni	سَیْلِی وَدھُو دَہُونِی	3,115	3,278	3,206	3,072	2,960
Row boats	رَو بَوٹ	358	537	682	690	686

۱۹۸۹ ۱۹۸۷ ۱۹۸۶ ۱۹۸۵ ۱۹۸۴ ۱۹۸۳ ۱۹۸۲ ۱۹۸۱ ۱۹۸۰

NUMBER OF FISHING UNITS IN 1989

<u>Atoll</u>		<u>Fishermen</u>	<u>Mechanized</u>		<u>Sailing</u>		<u>Row</u>	
			<u>Masdhoni</u>	<u>Masdhoni</u>	<u>Vadhudhoni</u>	<u>Boats</u>		
H.A.	ا	1620	119	37	198	51		
H.DH.	د	995	65	38	320	21		
SH.	س	1743	95	10	344	32		
N.	ن	1129	68	15	178	82		
R.	ر	2081	144	13	225	36		
B.	ب	1296	104	1	148	44		
LH.	ل	930	66	2	78	4		
K.	ک	932	77	10	79	6		
A.	ا	1548	179	72	298	90		
V.	و	212	23	1	18	12		
M.	م	915	69	7	63	37		
F.	ف	365	41	31	54	41		
DH.	د	688	56	10	95	96		
TH.	ت	1372	99	6	185	33		
L.	ل	1601	113	2	90	35		
G.A.	ا	1171	59	11	107	10		
G.DH.	د	2007	91	6	195	6		
GN.	ن	222	24	2	41	25		
S.	س	309	41	101	244	25		
MALE'	م	889	114	0	0	0		
TOTAL		22025	1647	375	2960	686		

دائره قومي ايدھ قري (1,000 وٽس)

NUMBER OF FISHING TRIPS ('000)

		1987	1988	1989
Mechanized dhoni	ميشونيز ڏونه قري	159	184	184
Sailing masdhoni	سارنگي ڏونه قري	2	1	1
Vadhu dhoni	واڏو قري	69	51	40
Row boats	ڪوٽي ڏونه قري	2	2	3

دائره قومي ايدھ قري - قري ڏانهن (1,000 ڏانهن قري ڏانهن)

FISH PRODUCTION - BY VESSEL TYPE ('000 MT)

		1987	1988	1989
Mechanized dhoni	ميشونيز ڏونه قري	52.7	68.6	68.8
Sailing masdhoni	سارنگي ڏونه قري	0.3	0.2	0.2
Vadhu dhoni	واڏو قري	3.5	2.4	1.7
Row boats	ڪوٽي ڏونه قري	0.1	0.0	0
Miscellaneous	ٻيا ڏونه قري	0.4	0.2	0.5
Total	ڪل ڏونه قري	56.9	71.5	71.2

دائره قومي ايدھ قري - قري ڏانهن (1,000 ڏانهن قري ڏانهن)

FISH PRODUCTION - BY SPECIES ('000 MT)

		1985	1986	1987	1988	1989
Skipjack	سڪيپ جڪ	42.6	45.5	42.1	58.6	58.1
Yellowfin tuna	يلو فائن ٽونا	6.1	5.3	6.6	6.5	6.1
Other tuna related species	ٻيا ٽونا سان تعلق رکهندڙا قري	5.0	2.9	3.2	3.0	3.6
Other marine fishes	ٻيا سمندري قري	8.2	5.6	5.0	3.4	3.4
Total catch	ڪل ڏونه قري	61.9	59.3	56.9	71.5	71.2

دیس کے مینڈیٹ شدہ مہنگوں کی فہرست، اگست 1989ء

FISH UTILIZATION AND EXPORT VALUE

	1985	1986	1987	1988	1989
دیس کے مینڈیٹ شدہ مہنگوں کی فہرست (1,000 روپے)					
Total landing ('000 MT)	61.9	59.3	56.9	71.5	71.2
دیس کے مینڈیٹ شدہ مہنگوں کی فہرست (1,000 روپے)					
Total Exports ('000 MT) 1/	34.8	35.6	39.5	37.0	51.8
مہنگوں کی فہرست					
Stock 2/	3.0	3.5	1.8	7.5	5.7
دیس کے مینڈیٹ شدہ مہنگوں کی فہرست					
Total consumption ('000 MT)	27.8	23.8	19.1	28.8	21.2
دیس کے مینڈیٹ شدہ مہنگوں کی فہرست					
Total value of Exports (million Rf)	27.8	23.2	19.5	29.3	32.7
دیس کے مینڈیٹ شدہ مہنگوں کی فہرست (مہنگوں کی فہرست کے ساتھ ساتھ)					
1/ Export (including previous years' stock					
2/ Stock of current year					
مہنگوں کی فہرست					

دیس کے مینڈیٹ شدہ مہنگوں کی فہرست

PRICE CHANGES IN FUEL OIL

	دیس کے مینڈیٹ شدہ مہنگوں کی فہرست	دیس کے مینڈیٹ شدہ مہنگوں کی فہرست
	<u>Prices Revision Date</u>	<u>Price Paid by fishermen</u>
Diesel	01-01-89	2.60/litre
Rotella 30	02-11-89	11.00/litre

ދަނޑު ފަންނަންނަން ބަލަން 1989 - 1989 ސަރުކާރުގެ ބަލަން

PRICE PAID TO FISHERMEN - END 1989

Species	ދަނޑު	Price Revision Date	Price/Kg (Rf)
<u>Fresh Tuna</u>	ފަނޑު ދަނޑު		
Over 2 kg	2 ފަނޑު ދަނޑު	03-12-89	2.00
Under 2 kg	2 ފަނޑު ދަނޑު	03-12-89	1.50
<u>Smoked & Dried Tuna (Maldives Fish)</u>	ފަނޑު ދަނޑު	03-12-89	10.00
<u>Dry Salted Tuna</u>	ދަނޑު ފަނޑު ދަނޑު		
1st grade	1 ފަނޑު	03-12-89	7.15
2nd grade	2 ފަނޑު	03-12-89	5.50
<u>Shark & Wahoo</u>	ދަނޑު ފަނޑު ދަނޑު		
1st grade	1 ފަނޑު	01-01-89	7.80
2nd grade	2 ފަނޑު	01-01-89	6.00
<u>Reef Fish</u>	ފަނޑު ދަނޑު		
1st grade	1 ފަނޑު	01-01-89	4.55
2nd grade	2 ފަނޑު	01-01-89	3.50
<u>Jack & Rainbow Runner</u>	ފަނޑު ފަނޑު ދަނޑު		
1st grade	1 ފަނޑު	01-01-89	6.50
2nd grade	2 ފަނޑު	01-01-89	5.00
<u>Spiny dog fish shark oil (litre)</u>	ފަނޑު ފަނޑު ދަނޑު (ލިޓަރު)	01-01-89	20.00

