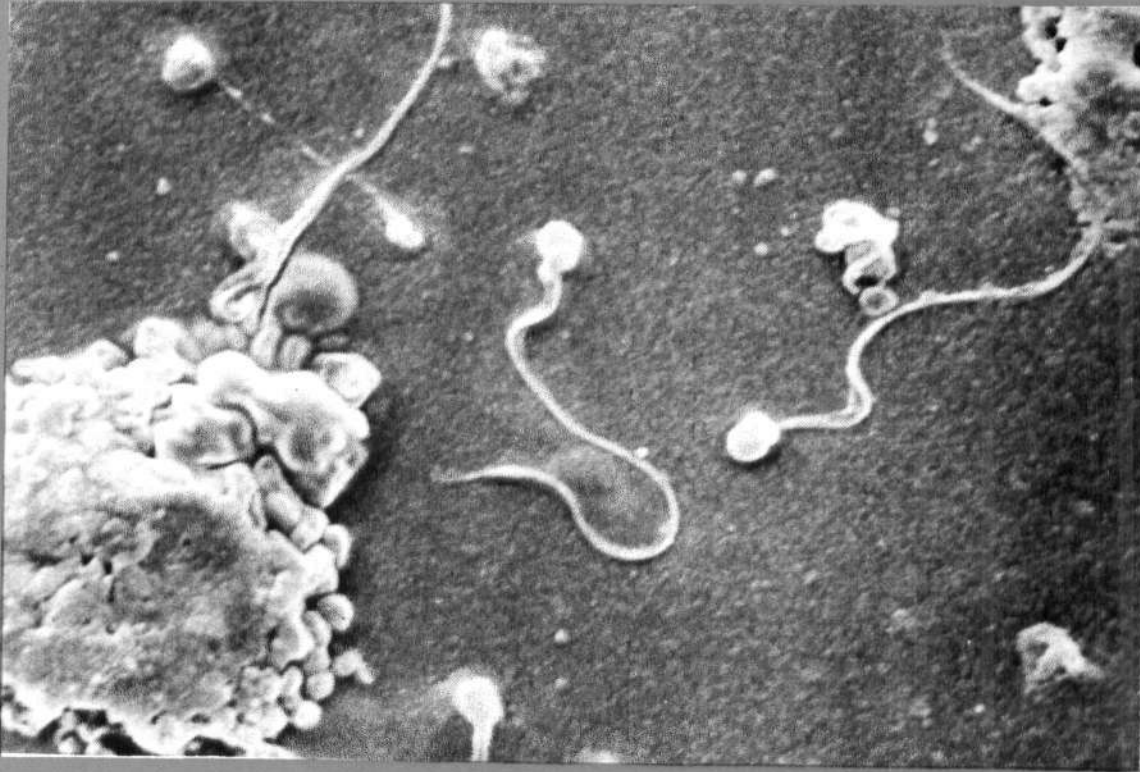




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A RESEARCH NOTE ON ECONOMIC PERFORMANCE OF 'DOL' AT SASOON DOCK*

Stakenet which is popularly known as 'dol' in Maharashtra is an important gear to fish, specially, Bombay duck and *Acetes* spp. A significant catch contribution by 'dol' is noticed in this state almost round the year except for a few months of monsoon at some centres. Though 'dol' is a stakenet, most of the units now-a-days operate mechanised boats. The 'khamba' system of 'dol' fixing is most popular and technically efficient but the cost of 'khamba' has gone up very high and the fishermen are substituting it with 'khunt' system. In the adjoining areas of Bombay 'khunt' system is commonly used for fixing the 'dol'. 'Khunt' is the wooden spike driven into the muddy bottom of the sea and used to tie the net.

Sasoon dock is one of the important fish landing centres in Maharashtra which is blessed with almost all infrastructure and fish marketing facilities since it is part of the Bombay city. It is commonly used for landing mechanised catch of trawl and 'dol' units. Based on the economic study conducted by the Central Marine Fisheries Research Institute, Cochin during 1990-'91 an effort is made to analyse the economic performance of 'dol' operating at Sasoon Dock centre. At this centre the 'dol' operation is noticed round the year. For observation of fish catch and cost of operation, the data have been collected on 10 sample days every month for one year starting from April 1990.

Investment and annual fixed cost

The value of a new craft with inboard engine is reported to be Rs. 2 lakhs and that of nets in a 'dol' unit Rs. 0.3 lakhs (Table 1). Taking 10% depreciation for the craft and 33.33% for gear the annual depreciation comes to be Rs. 30,000. Similarly, taking a mild interest rate of 15% per annum, an amount of Rs. 34,500 is set apart towards annual interest to be paid on capital investment of Rs. 2.3 lakhs. Thus, annual fixed cost is calculated at Rs. 64,500.

Operational cost

Fuel, labour, repair & maintenance and marketing are the main components of operational expenditure. The wage and food expenses of an average crew of 6 persons in a unit came

to Rs. 65,520 in a year (Table 2). An amount of Rs. 25,390 was spent on fuel during 1990-'91. The cost of repair & maintenance and marketing was found to be Rs. 11,000 and Rs. 9,500 respectively. Thus, the operational expenses totalled to Rs. 1,11,410 during the study period.

The annual fishing expenditure which is the sum total of fixed and variable cost comes to Rs. 1,75,910 for a 'dol' unit at Sasoon Dock.

TABLE 1. Investment in a 'dol' unit at Sasoon Dock and components of fixed cost (1990-91)

I. Items	Investment (Rs)
Boat	1,30,000
Engine	70,000
Net & other accessories	30,000
	Total = Rs 2,30,000
II. Annual depreciation (Rs)	
Boat and Engine	20,000
Net & other items	10,000
III. Interest on capital (@ 15% Pa)	
	34,500
IV. Total fixed cost (II + III)	64,500

TABLE 2. Operational expenses of 'dol' unit (1990-'91)

i) Fuel	Rs. 25,390
ii) Labour	Rs. 65,520
iii) Repairs & maintenance	Rs. 11,000
iv) Marketing etc.	Rs. 9,500
	Total
	Rs. 1,11,410

Production and revenue

On an average fishing was observed on 273 days by 'dol' units during 1990-'91. The catch mainly consists of *Acetes* (Jawla), Bombay duck, prawns, clupeoids and ribbon fish. The Table 3 shows that a maximum catch of 7,775 kg (Rs. 23,350) was observed during September and a

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TABLE 3. Production and revenue of a 'dol' unit at Sasoon Dock during 1990-91

Name of fish		April '90	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. '91	Feb.	March	Annual
1. Acetes Sp.	Catch %	57	68	69	44	22	18	21	40	56	58	54	38	44
	Value %	50	50	60	32	19	19	16	26	42	43	33	35	34
2. Bombayduck	C %	5	4	5	23	45	56	41	23	8	8	9	6	22
	V %	9	9	8	33	48	39	34	24	8	10	12	11	23
3. Penaeid prawn	C%	6	4	5	9	5	3	6	6	13	12	11	9	7
	V %	12	13	13	18	14	12	15	17	30	25	30	21	16
4. Clupeoids	C %	17	12	15	12	13	14	11	10	6	7	10	26	13
	V %	9	12	12	9	9	9	7	7	4	7	10	16	9
5. Pomfret	C %	2	1	—	—	—	5	5	3	1	2	2	2	2
	V %	10	6	—	—	—	18	16	14	7	8	8	9	9
6. Ribbonfish	C %	5	3	4	5	5	1	5	4	2	1	1	2	3
	V %	6	6	5	5	5	1	6	5	2	1	1	3	4
7. Misc. (including cat fish)	C %	8	8	2	7	10	3	11	14	14	12	13	17	9
	V %	4	4	2	3	5	2	6	7	7	6	6	5	5
Total catch (kg)		4476	4888	5040	2541	4136	7775	5500	5640	3750	2712	2354	2150	51,262
Value (Rs)		16488	16718	17712	10647	16104	23350	21475	19992	16500	13632	12540	9375	1,94,533
No. of days		20	21	24	21	22	25	25	24	25	24	20	22	273

TABLE 4. Economic performance of a 'dol' unit

No. of days fished	...	273
Total production (kg)	...	51,262
Revenue (Rs.)	...	1,94,533
Variable cost (Rs.)	...	1,11,410
Gross profit (Rs.)	...	83,123
Total cost (Rs.)	...	1,75,910
Net profit (Rs.)	...	18,623
Pay back period (yrs.)	...	4.7
Rate of return to capital (%)	...	23.1
Catch per day (kg)	...	188
Revenue per day (Rs.)	...	712.6
Variable cost per day (Rs.)	...	408.1
Gross profit per day (Rs.)	...	304.5
Total cost per day (Rs.)	...	644.4
Net profit per day (Rs.)	...	68.2
Productivity per man day (kg)	...	31.3
Fuel cost per kg of fish (Rs.)	...	0.50
Labour cost per kg of fish production (Rs.)	...	1.28
Total cost per kg of fish production (Rs.)	...	3.43
Revenue per kg of fish (Rs.)	...	3.79
Net earning per kg of fish (Rs.)	...	0.36

minimum of 2,150 kg (Rs. 9,375) during March. The *Acetes* catch was good (more than 40%) during 8 out of 12 months. From July to November, Bombay duck catch was more than 20%. Clupeoids varied from 6 to 26 per cent and ribbon fish from 1 to 5 per cent in the monthly catch. Pomfret catch was good in September and October (5% each). Catfish is included in miscellaneous catch.

In the total revenue of Rs. 1,94,533 a maximum contribution was made in September and the minimum in March. The fishing days ranged from 20 to 25 a month. In all the months, *Acetes* and Bombay duck contributed maximum towards the annual revenue. Penaeid prawn contributed 12-30% towards the monthly revenue.

Profitability level

Annual net profit of a 'dol' unit is calculated at Rs. 18,623 during the study period (Table 4). The pay back period worked out at 4.7 years and the rate of return to the capital at 23.1%. The productivity per man day was 31.3 kg. One kg of fish production requires Rs. 0.5 worth of fuel and adds Rs. 3.79 to the revenue. The net earning per kg of fish is calculated at Rs. 0.36. Thus, 'dol' operation during 1990-91 was profitable at Sasoon dock.