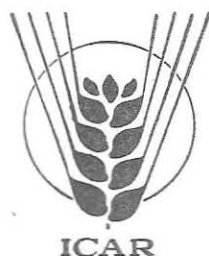


RESEARCH SCHEME
ON
CULTURE AND PROPAGATION OF MARINE PRAWNS



CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
COCHIN
INDIAN COUNCIL OF AGRICULTURAL RESEARCH

This is revised later. The financial
outlay etc. are same. But the
difference is only in the arrangement
of the matter. The final project starts
with the biodata of the principal
investigator and his publications

RESEARCH SCHEME ON

CULTURE AND PROPAGATION OF MARINE PRAWNS

Location: Cochin backwaters (Narakkal)

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I. OBJECTIVE.

Considerable development has taken place in the exploitation and utilisation of the prawn resources of the country in recent years and this is reflected in the yearly increase of the catches and export of processed prawns. More than 60% of the penaeid prawns landed are now processed and exported to foreign countries. During the past ten years India's export of processed prawns and prawn products rose from 6,795 tonnes in 1961 to 27,064 tonnes in 1970. Being an esteemed item of food all over the world the demand for prawn is bound to keep on increasing in future years, which can be met only by effecting a continuous increase in production. There is a general feeling that our existing prawn grounds are being exploited to a maximum degree and under the circumstances a further sustained increase of prawn production can be brought about by either finding out additional natural prawn resources or by culturing marine prawns in confined waters.

The first aspect is already being covered by the various projects of the Central Marine Fisheries Research Institute and further intensification of the same is the subject matter of a co-ordinated project now in operation.

The second aspect, culturing of marine prawns, is the most important one, as significant results in this direction have been obtained in other countries like Japan, U.S.A., Taiwan and Philippines.

The objective of the present scheme is, therefore, to conduct researches and develop suitable methods of culturing commercial species of marine prawns of India.

II. WORK ALREADY DONE IN INDIA AND ABROAD AND THE REASONS FOR THE PROPOSED INVESTIGATIONS

WORK DONE ABROAD:

The significant investigations on culture and propagation of commercial penaeid prawns reported from other countries are (i) the successful breeding and culture of penaeid prawns in Japan (recently in Korea and Taiwan also), (ii) culture of tiger prawns in Philippines, (iii) spawning of prawns in confined waters carried out in the U.S.A. and (iv) breeding and rearing of the freshwater prawns under laboratory conditions in Malaya.

The Japanese work which is the most important, deals with the species Penaeus japonicus, which is closely allied to the Indian prawn, P. indicus. It has been possible to get the adults of the former spawn in suitably designed tanks and to rear the larvae through various stages to marketable size of adult prawns. This knowledge has been extended and commercial undertakings have taken up prawn farming in a fairly big way in that country.

In Philippines, the Jumbo tiger-prawn P. monodon is reared to marketable size in brackish water ponds as a regular commercial practice. The ponds are stocked with the juveniles of the species collected from the brackish water swamps and lagoons.

In the United States the commercial species of prawns P. setiferus, P. aztecus and P. duorarum are successfully reared in the laboratory and trials on artificial culturing of these species are under way.

Successful spawning and rearing of the freshwater prawn Macrobrachium rosenbergii have been reported from Malaysia.

WORK DONE IN INDIA:

Periodic attempts in rearing some of the commercial species of prawns have been made at different laboratories and these works were mostly concerned with the study of the taxonomy of larval forms. Some investigations have been carried out on different aspects on the so called paddy-cum-prawn culture practices existing in the southwest coast of India. But no concerted effort has so far been made to culture the important species of prawns and to develop methods to propagate them on a commercial scale. It is, therefore, necessary to undertake this work in order to augment the prawn production of the country.

III. TECHNIQUE PROPOSED TO BE ADOPTED FOR INVESTIGATION

The research work proposed to be undertaken will be as follows:

- i) The fishing boat attached to the Institute will carry out special fishing operations for spawners. The spawners will be brought to the field laboratory and experiments will be carried out to make the selected species of prawns breed in confined waters under controlled conditions.
- ii) Rearing of the larvae of prawns through various stages will be undertaken till they attain marketable size. Extensive studies on larval feeding, growth, mortality, habits, etc. necessary for rearing and farming will be made.

IV. DURATION

The duration of the scheme is five years.

V. PRACTICAL UTILITY OF THE INVESTIGATION INCLUDING ECONOMIC IMPLICATION OF THE RESULTS LIKELY TO BE ACHIEVED THROUGH THE SCHEME

The economic benefits that would follow as a result of the introduction of prawn culture techniques in the country would be very great. Thousands of acres of brackish water swamps and lagoons are at present lying unutilised in the coastal areas and these could be used for prawn farming. Increase in prawn production will bring considerable economic benefit to the fishermen and will also provide additional raw material for processing and export which will eventually increase the foreign exchange earning of the country.

VI. FACILITIES AVAILABLE AND/OR THAT WILL BE MADE AVAILABLE BY THE STATE GOVERNMENT

- a) Supervision: This will be the responsibility of the Central Marine Fisheries Research Institute.
- b) The work on this project can be effectively handled only from a well equipped laboratory situated in close proximity with the sea and brackish water areas. Considering these matters and the facilities available, Narakkal, a fishing village about 15 miles north of Cochin is found ideally suitable for this scheme. The Kerala State fisheries department has a

fish farm at Narakkal and efforts are being made to get some area of this farm released for this purpose. The Director of Fisheries, Kerala has informed that he is in agreement with the proposal to get some area from the farm for this purpose released. The financial commitment on land would, therefore, be only nominal.

- c) Equipment: Essential major equipments required are listed in Statement I annexed.

STATEMENT I - TOTAL NON-RECURRING EXPENDITURE

				Rs.
1.	Winch, Pump and other scientific accessories on board the boat	...	...	5,000
2.	Dinghy	i) 12 Ft 1 No.	...	2,000
		ii) 14 Ft 1 No.	...	3,500
3.	Outboard Motor 2 Nos.	...	...	10,000
4.	Shrimp trawls (Synthetic twine) with accessories 4 Nos.	...	...	15,000
5.	Aquaria 20 Nos.	...	...	3,000
6.	Trans-box 6 Nos.	...	...	1,500
7.	Air Compressor 1 No.	...	...	2,000
8.	Water circulation Pumps and accessories 2 Nos.	...	...	4,000
9.	Air conditioner 2 Nos.	...	...	6,000
10.	Thermostat 6 Nos.	...	...	1,500
11.	Refrigerator 2 Nos.	...	...	6,000
12.	Hot air oven 1 No.	...	...	1,000
13.	Nylon screen netting of different meshes	...	...	5,000
14.	Ready made hapas 25 Nos.	...	...	2,500
15.	Sensitive Self indicating lever balance with weights 1 Kg. capacity 1 No.	...	...	3,000
16.	Sensitive balance to weigh in milligrams	...	...	3,000
17.	Polythene wares, pipes, basins etc.	...	...	1,000
18.	Jeep with Trailer	...	...	25,000
19.	Provision for construction of temporary Laboratory, Services and Experimental Tanks	...	...	2,00,000
TOTAL				3,00,000

STATEMENT II - PAY OF OFFICERS AND ESTABLISHMENT
(Recurring Expenditure)

S.No.	Designation and scale of Pay of the post	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total for
		(No. of posts)	(No. of posts)	(No. of posts)	(No. of posts)	(No. of posts)	5 years
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1.	Junior Fishery Scientist (400-40-800-50-950)	4,800 (1)	5,280 (1)	5,760 (1)	6,240 (1)	6,720 (1)	28,800 (1)
2.	Senior Research Assistant (325-15-575)	3,900 (1)	4,080 (1)	4,260 (1)	4,440 (1)	4,620 (1)	21,300 (1)
3.	Jeep Driver (110-3-131-4-139)	1,320 (1)	1,356 (1)	1,392 (1)	1,428 (1)	1,464 (1)	6,960 (1)
4.	Fieldman (80-1-85-2-95-3-110)	1,920 (2)	1,944 (2)	1,968 (2)	1,992 (2)	2,016 (2)	9,840 (2)
5.	Watchman (70-1-10-EB-1-85)	2,520 (3)	2,556 (3)	2,592 (3)	2,628 (3)	2,664 (3)	12,960 (3)
6.	Messenger (70-1-60-EB-1-85)	840 (1)	852 (1)	864 (1)	876 (1)	888 (1)	4,320 (1)
		15,300	16,068	16,836	17,604	18,372	84,180
		or	or	or	or	or	or
		15,500	16,500	17,000	18,000	18,500	85,500

STATEMENT III - ALLOWANCES, HONORARIA ETC.

	I Year	II Year	III Year	IV Year	V Year	Total for 5 years.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Dearness allowance, House rent allowance, etc.	13,000	13,500	14,000	14,500	15,000	70,000
Travelling Allowance	2,000	2,000	2,000	2,000	2,000	10,000
Other Allowances, Honoraria etc.	3,000	3,000	3,000	4,000	4,000	17,000
TOTAL:	18,000	18,500	19,000	20,500	21,000	97,000

STATEMENT IV - CONTINGENCIES

	I Year	II Year	III Year	IV Year	V Year	Total for 5 years
Running cost of Jeep	3,000	3,000	3,000	4,000	4,000	17,000
Ropes, Anchors and buoys	4,000	4,000	4,000	4,000	4,000	20,000
Other contingencies	2,000	2,000	2,000	2,500	2,500	11,000
	9,000	9,000	9,000	10,500	10,500	48,000

STATEMENT V - TOTAL RECURRING EXPENDITURE

	I Year	II Year	III Year	IV Year	V Year	Total for 5 years
Pay of Officers and Establishment	15,500	16,500	17,000	18,000	18,500	85,500
Dearness Allowance etc. ...	13,000	13,500	14,000	14,500	15,000	70,000
Travelling Allowance ...	2,000	2,000	2,000	2,000	2,000	10,000
Other Allowances, Honoraria etc.	3,000	3,000	3,000	4,000	4,000	17,000
Contingencies ...	9,000	9,000	9,000	10,500	10,500	48,000
TOTAL ...	42,500	44,000	45,000	49,000	50,000	2,30,500

STATEMENT VI - TOTAL RECURRING AND NON-RECURRING
EXPENDITURE FOR THE FIVE YEARS' SCHEME

Non-recurring expenditure (As per statement I)	...	Rs. 3,00,000
Recurring expenditure (As per statement V)	...	Rs. 2,30,500
		<hr/>
	Total:	Rs. 5,30,500

N.B: The Launch and its crew belonging to the Institute will be
used for the scheme.