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**OPERATIONAL RESEARCH PROJECT
ON
AN INTEGRATED APPROACH TO BLENDING SEA
FARMING WITH CAPTURE FISHERIES FOR RURAL DEVELOPMENT
AT KOVALAM, MADRAS**



OCTOBER, 1977

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE

(I. C. A. R.)

COCHIN-682 018

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
KRISHI BHAVAN, NEW DELHI.

APPLICATION FOR THE GRANT FOR
OPERATIONAL RESEARCH PROJECT FOR CONSIDERATION

1. TITLE OF THE SCHEME

"Integrated Approach to Blending Sea Farming with
Capture Fisheries for Rural Development"

2. Location

- | | |
|--|---|
| a) NAME AND ADDRESS OF THE
INSTITUTE/UNIVERSITY | Central Marine Fisheries
Research Institute,
Post Bag No. 1912,
Ernakulam,
Cochin-682018. |
| b) NAME AND ADDRESS OF THE
HEAD OF THE DEPARTMENT | Dr. E.G. Silas,
Director,
Central Marine Fisheries
Research Institute,
Post Bag No. 1912,
Cochin-682018. |
| c) ACTUAL LOCATION WHERE THE
RESEARCH WORK WILL BE
CARRIED OUT | <u>Phase I</u>
Kovalam, MADRAS
(Tamil Nadu) |

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1. a. Name of the project/proposal

"Operational Research Project on an Integrated approach to blending Sea Farming with Capture Fisheries for Rural Development".

b. Background

The Indian Council of Agricultural Research has initiated during 5th Five Year Plan a few Operational Research Projects in agriculture and live-stock for developing an integrated approach to improve rural economy with the full cooperation of the local people and voluntary and other organisations in the area. However, the marine fisheries sector has been left out and the state of knowledge existing to-day demands that we consider ways and means of improving the rural economy of the coastal people involved in fishing activities. India has a coastline of about 6,000 km along which are distributed about 2,052 fishing villages with a fisher population of nearly 32,81,500 representing 0.6% of the total population of the country. Nearly 1 million fishermen of the total fisher population are involved actively in traditional marine capture fishery operation, employing indigenous crafts and gears within a restricted belt along the coast. Their contribution to the total marine fish production of 1.3 million metric tonnes (1976) amounts to nearly 70% of this catch, the remaining coming from mechanised boats and larger trawlers.

The present status of the fisheries and socio-economic conditions of the population of Kovalam Fishing Village, situated 35 km South of Madras are indicated below.

A Pilot Socio-Economic Survey was conducted at Kovalam Fishing Village in Tamil Nadu in July 1977 to understand and to evaluate the present economic level of the local fishermen. There are a total of 175 families of which 48 are Muslims and 127 Hindus. Information was collected under various heads covering the number of persons in each house, number of active fishermen and those with other occupations.

Information was also collected on their immovable and movable assets with ownership of houses, crafts, gears etc. The income, expenditure and saving factors were also studied. Their present literacy level was also recorded.

A study of the above factors reveals that out of the total population of 975 persons, roughly one fourth are Muslims and the rest Hindus. The average number is about 5.5 persons per house. The percentage of the male adults is 32 and they are all engaged in some form or other of fishing activity.

Women folk belonging to 12% of the families are engaged in other avocations such as basket weaving, teaching and marketing of fish.

66.3% of the families own boats and nets and the remaining are engaged as labourers in fishing. The type of craft used is the cataraman and a few Masula boats. The gear in use includes hooks and lines and nets of various types and material.

97% of the fishermen have their own houses which fall under the following classification. Thatched houses 74%, tiled houses 21% and terraced houses 2%. Only 3% of the fishermen do not own houses, but live in rented premises.

Except during the North-East monsoon in October-November, fishing is carried out by the villagers throughout the year.

A wide range of annual income from Rs.600/- to Rs.8000/- has been recorded. 61% of the families are in the annual income group of below Rs.2000/-. Annual income per house is about Rs.2055/- and per capita income is Rs.369/-. An annual saving of Rs.150/- per house hold works out to Rs.27/- per head per annum. The literacy is about 21.4% of the population. Except in two cases where boys have gone for college education, the rest are all of elementary school level who take to the fishing profession after that stage.

For additional information, item 20 in the proforma may be referred to.

2. a. Products

Fish and shell fish produced by sea farming and fish captured in traditional fishing from the inshore waters. Part of this production will have export value.

b. Co-products and by-products

In addition, other cultivable marine organisms such as sea weeds, prawns, fish etc. will also be farmed and an ancillary cottage industry for the products of agar agar and other by-products will be possible.

3. Use of the products, by-products, machine/equipment/Instruments.

Fish and mussel flesh is a source of cheap proteinous food. Prawns have high export potential. Mussel shells are used for lime and making ornaments such as ear-rings etc. Sea weeds are used for the preparation of agar agar.

The equipments such as poles and ropes required for this project are indigenous and easily procurable. The craft and gear required in traditional fishing is also locally available.

4. a) Present consumption pattern

90% of the fish landed is sent to Madras city market in fresh as well as iced conditions. The rest is consumed locally. At present no mussels are produced.

b) How is the demand being met?

Indigenous production is from traditional resources for fish. Shell fish demand is not being met at present.

(i) By whom/from whom

Local fishermen.

(ii) Quantity

The estimated annual marine fish catch at Kovalam is about 200 tonnes mainly constituted by lesser sardines, anchoviella, ribbon fishes, grunters and croakers.

c) Estimated future demand

There is a very heavy demand for fish and other marine organisms produced in this area.

d) Present market price

Fish: Rs.2/- per kg on an average and
Mussel: Rs.1/- per kg (with shell)

5. Process

a) Background information, existing technology and alternatives in India and abroad

Mussel culture is in vogue in countries such as France, Spain, Philippines etc. During the last few years intensive work has been carried out at the Central Marine Fisheries Research Institute on coastal aquaculture, particularly the culture of fishes, prawns, pearl oyster for pearl production, edible oyster, mussels and seaweeds. The technical feasibility of large scale culture operations has also been successfully proven. At present pilot projects for testing economic feasibility of large scale culture of cultivable organisms in our coastal waters are under eay.

With these developments, the time is opportune for considering ways and means by which the socio-economic conditions of the coastal rural population could be improved. A new concept would be to integrate the culture and capture fisheries as a forward step in this direction. Having this in view, an operational project on an integrated development of fisheries blending culture and capture fisheries is proposed here.

b) Detailed description of the process its specific advantages and scope for its present and potential application

This operational project should consider selected centres along our coast wherein technical expertise that has been gained in both culture and capture fisheries could be taught and demonstrated to local fisher population. The assimilation of this into their day-to-day working system should help to blend these two major types of fisheries to increase productivity and in turn economic returns. Keeping these in view, the objectives of the project will be as follows:

Objectives

(i) To establish the possibilities of supplementing traditional fishing with sea farming(mariculture) in order to increase production and improve the socio-economic conditions of the fisherfolk.

(ii) Demonstrating the feasibility for mussel culture and other cultivable organisms such as prawns, fish, seaweeds etc. on large scale and its economic viability by transferring the technology available with C.M.F.R.I.

(iii) To create a sense of involvement and participation among local fishermen in this project by associating them from the initial demonstration stages itself, so that this venture becomes self generating, equipping them to take to sea farming along with their traditional fishing.

(iv) To demonstrate the scope for overall improvement of the socio-economic conditions of the rural area where this project becomes operative through development of infrastructure for processing, marketing and better methods of utilization.

(v) To assess the direct and indirect impact of this project in the area where it is operative in comparison to the socio-economic conditions of the project area prior to the introduction of the project.

The project will be taken up in a phased manner involving selected coastal villages in different maritime states in each of which there will be at least 100 families engaged in some aspect or other of fishing. In phase-I it has been proposed to take up the fishing village of Kovalam, 35 km south of Madras which has 175 families with a total population of 975 persons. Proximity of the Institute's field laboratory at Kovalam and of the field activities on large scale culture of mussel and other cultivable organisms undertaken in the area could be an added advantage to initiate the operational project at this centre. A general note on Kovalam village is given in Annexure-I.

- c) In the light of the trends of research in this line, does the proposal made have reasonable chance of standing test of time, say 10 - 15 years?

Yes.

6. Laboratory and/or preliminary work

a) Scale of investigation

As a part of the Institute's programme, culture of marine organisms such as mussels, seaweeds etc. has been carried out for the last few years.

b) Quantity of product prepared

Based on field trials it is evident that in the inshore waters of Kovalam an estimated 500 to 1,000 tonnes of mussels per annum could be produced.

- c) Are you able to supply adequate quantity of the product as sample to the entrepreneurs

Yes.

- d) Date of laboratory/preliminary investigation with respect to operating conditions, approximate consumption of raw materials and utilities, yields, man power etc.

At Kovalam, open sea culture of mussels in rafts

measuring 5 x 5 metres was started in the year 1976 on the basis of the preliminary experiments conducted at Ennore backwaters during 1973-75.

The total cost of each raft including cost of (i) six empty 400 litre oil drums suitably painted (floats) (ii) four anchors with chains (iii) casurina poles and (iv) 50 ropes of 9 metre length with compliment of bags for seeding etc. works out to be Rs.5,000/-.

Effective length of each rope was 6 metres requiring ^{kg} 6/ of seed mussel. Each rope on an average produced 50 kg of mussel for a period of six months.

7. Any work done on pilot/prototype/project

- a) Capacity of plant
- b) Duration of investigation
- c) Design data collected e.g.
consumption of raw materials,
utility, operating conditions
yields, etc.

Not applicable.

8. Quantity of products

- a) Specification of the products, I.S. or others
Not applicable.
- b) Have the products been tested to confirm to the specifications

Not applicable.

9. Pilot plant/semi-commercial plant

- a) Suggested capacity

2,000 poles and 6,000 ropes with an effective length of 3 metres and a stocking rate of 1 kg/metre length with mussel seed.

- b) Layout of the plant indicating

- i) A farm area in the depth range of 4 to 6 metres is to

be taken up inside the bay north of the village and just outside the present fishing area and also off the usual navigational route for fixing the 2000 poles. A frame work will be fixed with these 2000 poles to facilitate suspending 6000 ropes for mussel culture.

(ii) A one ton capacity ice plant with a cold storage room of 2 ton capacity belonging to the Govt. of Tamil Nadu is available at Kovalam which may be used for storage and obtaining ice.

10. Raw materials

a) Specification of raw materials

Pole culture: 2,000 poles each of length 9 metre with 10-12 cm girth at the bottom; anti fouling chemical, 100 litres and 9 metres of Cotton Webbing bag for each pole.

A wooden frame work will be provided connecting the 2,000 poles mentioned above from which about 3,000 ropes can be suspended providing additional space for mussel culture. For this purpose, each rope of about 8 metres with six metres of cotton webbing is required.

Seed produced by the Institute at Kovalam will be used at a nominal operational cost.

b) Their availability

(i) Indigenous: Everything available locally.

(ii) Imported: Nil.

11. Equipment for pilot plant/semi-commercial plant/prototype

a) List of all equipment along with approximate specifications:

i) Indigenous:

ii) Imported:

} Vide statement V
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b) Likely suppliers:

Firms within India can supply.

c) Do you have any of this equipment already available?

No.

d) Time required for procuring the equipment, erection, commissioning and trial production:

As soon as the funds are made available.

12. Economics of the pilot plant/semi-commercial plant prototype plant (as per proforma for predesign cost estimates)

(a) <u>Fixed capital on building:</u>	30,000
(b) <u>Fixed capital on plant/machine:</u>	3,58,000
(c) <u>Working capital:</u>	4,04,760
(d) <u>Cost of production:</u>	7,92,760

13. Marketability prospects and distribution problems

The mussels could be marketed in the fresh condition locally and at Madras, according to demand. The rest could be shelled by local fisherwomen, iced and sent to freezing plants for processing and canning. Better marketing facilities for captured fishes in traditional fishing will also be created.

14. Safety consideration, if any: Nil

15. Anticipated effluent waste and pollution problems and suggestions for tackling the same:

Nil.

16. Copy of the complete patent specification of process if patented.

Nil.

17. Any restrictions/difficulties anticipated in the implementation of the proposal.

Nil

18. Detailed phased programme of work along with funds. Please indicate total period required to complete the work

1st Year 1) Enlisting local fishermen boys

- 2) Fixing 500 poles and 1,500 ropes
- 3) Seeding of poles and ropes
- 4) Procuring the equipment
- 5) Managing the farm
- 6) Harvesting the crop after six months at regular intervals.
- 7) Arranging for marketing.

- 2nd year:
- 1) Fixing 500 additional poles and 1,500 ropes
 - 2) Seeding of poles and ropes
 - 3) Managing the farm
 - 4) Harvesting the crop at regular intervals
 - 5) Marketing
 - 6) Maintenance of poles and ropes

- 3rd year:
- 1) Fixing an additional 1,000 poles and 3,000 ropes
 - 2) Seeding of poles and ropes
 - 3) Managing the farm
 - 4) Harvesting the crop at regular intervals
 - 5) Marketing
 - 6) Maintenance of poles and ropes

4th and 5th years: As per items 2 to 6 in 3rd year.

<u>Funds requirements:</u>	<u>Rs.</u>
1st year	2,41,280
2nd year	1,55,150
3rd year	2,32,020
4th year	83,720
5th year	80,590
T o t a l	7,92,760
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(Details in statements I to VII)

19. Process which involve production of equipments, instruments etc.

- | | | |
|--|---|----------------|
| a) <u>Has any prototype been prepared?</u> | X | |
| <u>If so, number of prototypes already made.</u> | X | |
| b) <u>Have the prototypes been operated successfully?</u> | X | |
| c) <u>Have the prototypes been demonstrated satisfactory to entrepreneurs?</u> | X | Not applicable |
| d) <u>How many more prototypes would be needed before production to be stabilised?</u> | X | |
| e) <u>Have you a set of drawing for making prototypes?</u> | X | |
| f) <u>What is the suggested number of pieces for production on a commercial scale?</u> | X | |
| g) <u>Estimated requirement of capital</u> | X | |
| h) <u>What is the estimated cost of the item when produced on a commercial scale?</u> | X | |

20. During the first year it is anticipated to get a minimal production of 40,000 kg of mussels. This will increase to 80,000 kg during the second year and peak production capacity of 1,60,000 kg during the 3rd year. The targetted production for the first five years therefore will be about 6,00,000 kgs. The minimum price that can be obtained for mussel is Re.1/kg, yielding a total gross income Rs.6,00,000, against the expenditure of Rs.3,20,000 which includes the total cost of fixing 2000 poles, putting cross beams suspending 6000 ropes and their maintenance for 5 years.

In addition there is a possibility of opening a subsidiary cottage industry for utilising the shells which form 50% of the total production. There has already been some enquiries from interested parties on the

availability of shells for making ornaments such as cufflinks, ear rings, buttons etc. because of the colourful nacreous layer present in the shell. Large scale production of shell fish would also lead to the development of cottage level lime shell production.

It is also possible to take up sea weed culture, prawn and fish culture in the adjacent areas making use of the inundated pools and adjacent back waters which are practically unused now.

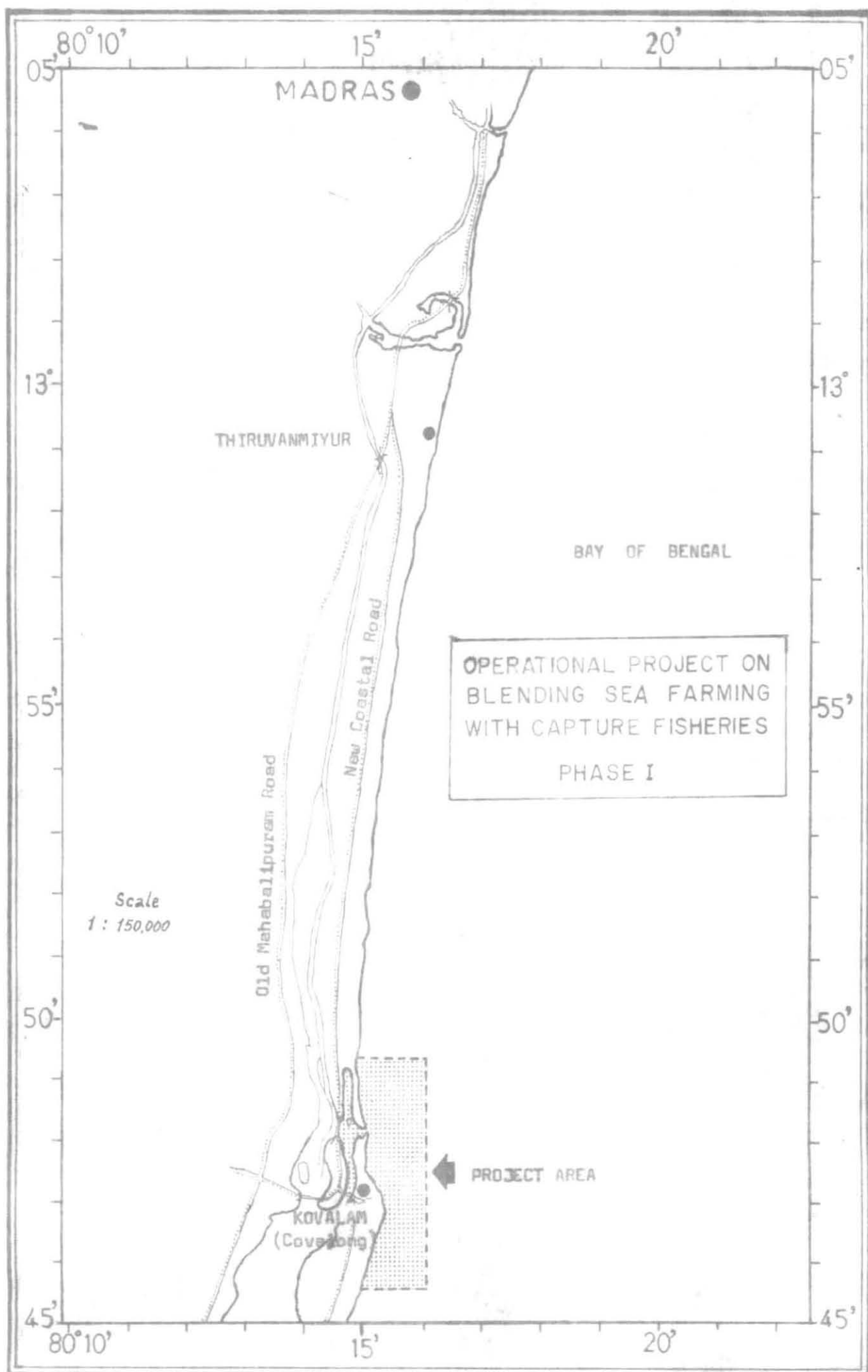
Additional income from these sources will help the fisherfolk of this place to develop self reliance by taking to this avocation new to them. This project will also develop into a self supporting one from the third year of its inception as by that time there will be full participation and involvement of all the fisherfolk, and also the project would have reached its peak productive capacity.

EXTENSION OF OPERATIONAL PROJECT

Similar operational research programmes will be taken up in other suitable coastal areas of the maritime states in due course.

As a result of introducing this operational project of blending sea farming with traditional capture fisheries it is hoped that an integrated, productive, stable and self generating rural economy will be achieved to improve the quality of life of rural coastal population.

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GENERAL INFORMATION

Kovalam Fishing Village is a small hamlet situated about 35 km South of Madras city on the Madras, Mahabalipuram Road. It is a pilgrimage centre for Muslims, Christians and Hindus alike because of the existence of a famous Muslim Durga, a Catholic church built 200 years ago and also a temple. There is a small bay surrounded by casurina gardens and coconut trees. Fringing this bay, live the fishermen in a group of 175 huts and built up houses. The entire water front is strewn with Catamarans of different sizes and a few Masula boats.

The fishermen belong to two communities. Pattinava Chettiars are Hindus who form the main and influential group of fishermen owning large catamarans, Masula boats and nets of various types. The other smaller group consists of Muslims who own smaller catamarans specialising in line fishing.

From the middle of December to April the current and winds are from South to North. This wind is called "Kachan Kathu". From May to September the current and wind are variable and never stable. May to June the current is strong and moving from North to South on some days and South to North on other days. During this period the wind direction is perpendicular to the current in that it is from West to East in the mornings (Kodai Kathu) and East to West in the afternoon (Konda Kathu). From July to September while the current remains changing between North and South the wind blows South to North most of the time and sometimes it changes to North to South and East to West. As a result during this period extending from May to September the sea is choppy and sometimes very rough. During the Monsoon months of October to December the sea is very rough bordering on cyclonic conditions now and then, at this time the current is from North to South and the wind from North East to South West (Vadai Kathu).

Seasons of fishing and gear used

From January to May the gill nets 'Vala valai' and 'Kavala valai' and the shore seine 'peria valai' are operated for catching mackerel, sardine and anchovies.

From June to December bag nets, 'Thuri vala' and also gill nets are operated landing a miscellaneous catch of ribbon fish, lactarius, sardines, prawns, silver bellies, seer fish etc.

Line fishermen operate throughout the year except for days when the sea is very rough.

Disposal of catch and sharing of income

All the fish is disposed off in the fresh condition to local merchants comprising mainly 8 Hindu women and one Muslim business man who buy the morning and evening landings. Hawkers who come on cycles from other places buy the fish that is landed sometime in the noon.

All the Muslim fishermen who do line fishing give their catch to the Muslim middleman who sustains them during the off season and he disposes off the catch in the city market. The Hindu fishermen^{wo} give an advance of Rs.50 to 100 to a few catamarans each, as a guarantee money and all the fish brought by these catamarans are given to these women on an agreed price. If the price is not agreeable which is a rare case, the catamaran owner has a right to give to any other person who offers a better price. The women then ice all the fish they buy and put them in baskets of about 100 kilos capacity and transport them to the city by a fish van run by a private party. This van brings ice from the city on its return journey. The quantity of ice used is one block costing Rs.7/- for 4 baskets of fish. The cost of transport charged per basket is Rs.6/- plus Rs.4/- return fare for one person who accompanies the baskets. It is usually taken to the Saidapet and Kodambakam markets in the city where they pay a small amount to the market lessee on the number of baskets sold by each women. At noon the fish is auctioned

by the fishermen to the cycle vendors who buy the fishes and carry by cycle load to markets enroute to Tambaram, Tambaram, and near-by places. A very small quantity is however sold by the fishermen themselves in the local market.

At present there are three agents who collect all prawns and lobsters and remove them to the freezing and processing plants in and around Madras. No large scale sun drying of fish is carried out at this village. Except for a one ton ice plant of the Department of Fisheries, Tamil Nadu which has remained out of commission for a very long time there are no other processing facilities.

Division of money among fishermen:

There is a very interesting method of division of the total sale proceeds of the fish among the fishermen who go for fishing and those who own the boats as follows.

Hooks and Lines: One share for each worker and one share for the owner of hooks, catamaran & sail.

Shore seine: $1/3$ share for the shore seine owner and $2/3$ is divided among the number of fishermen who help in laying and hauling the net.

Boat seine: One share for the net and one share for each of the workers.

Gill net: Half share for owner and half share divided among the workers.

Village Panchayat & its function: The village has a headman who is helped by a group of elected representatives known as the Panchayat. Problems pertaining to the village are examined by this body in detail and decisions are given. The decision of the Panchayat is binding and the fisherfolk meticulously obey it. Maintenance of this group and its activities is done by collecting a fee of twentyfive paise per basket of fish purchased by the men. They also charge a small amount at weddings and social functions. Fines are also collected from persons who break panchayat rulings.

Indebtedness: Fishermen of this village get loans only when large sums of money are needed for functions such as marriages, for construction of houses and for craft and gear. While a few persons go for loans from money lenders at exorbitant rates, they usually finish these activities by taking loans from relatives on a promise to return the same from their income. They also mobilise resources through chit funds and also mortgaging their jewels.

Other facilities: There is a co-educational middle school run by the Catholic convent. There is a Post and Telegraph Office with telephone facilities. There is no public hospital, but a private doctor from Kelambakam 4 miles away visits Kovalam once a day. There are no banks and the local co-operative society issues only Sugar cards. The Tamil Nadu Government through their functional fishermen Co-operative Societies issues loans under four major heads.

- (1) Long term loans (repayable in ten years)
- (2) Medium term loans (5 years)
- (3) Short term loan (1 year)
- (4) Working capital loan (10 years)

Annexure II Organisation - Staff pattern

Director

Central Marine Fisheries Research Institute

Project Officer (T7)

			1 Watchman
1 Technical Assistant(T4)	1 Junior Clerk	1 Jeep Driver	Supporting
			Staff Grade.I

Annexure III - Staff Requirement

Sl. No.	Designation and scale of pay of posts	No. of posts required	Qualification prescribed (for Scientific/Technical posts only)	No of posts already existing
1.	Project Officer (T7) (Rs.1100-1600)	1	Graduate in Zoology with 10 years experience in Marine Fisheries including 3 years practical experience in coastal aquaculture and extension.	Nil
2.	Technical Assistant(T4) (Rs.550-900)	1	As per ARS recruitment rules	Nil
3.	Junior Clerk (Rs.260-400)	1	As per prescribed qualifications	Nil
4.	Jeep Driver (Rs.260-430)	1	-do-	Nil
5.	Watchman (Rs.196-232)	1	-do-	Nil

STATEMENT - 1Recurring Expenditure: Pay of officers and Establishment

Sl. No.	Designation of post and scale of pay	No. of post	1st year Rs.	2nd year Rs.	3rd year Rs.	4th year Rs.	5th year Rs.	Total Rs.
1.	Project Officer (T7) (Rs.1100-1600)	1	13,200	13,800	14,400	15,000	15,600	72,000
2.	Technical Assistant (T4) (Rs.550-900)	1	6,600	6,900	7,200	7,500	7,800	36,000
3.	Junior Clerk (Rs.260-400)	1	3,120	3,192	3,264	3,336	3,408	16,320
4.	Jeep Driver (Rs.260-430)	1	3,120	3,192	3,264	3,336	3,408	16,320
5.	Watchman (Rs.196-232)	1	2,352	2,388	2,424	2,460	2,496	12,120
Total:		5	28,400	29,500	30,600	31,600	32,700	1,52,800

STATEMENT - IIRecurring Expenditure - Allowances and honoraria

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Details		Ist year Rs.	2nd year Rs.	3rd year Rs.	4th year Rs.	5th year Rs.	Total Rs.	
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1.	Allowances	19,880	20,650	21,420	22,120	22,890	1,06,960	
2.	Travelling allowance	5,000	5,000	5,000	5,000	5,000	25,000	
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Total:		24,880	25,650	26,420	27,120	27,890	1,31,960	
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STATEMENT -- III

Recurring Expenditure - Contingencies

Items	Ist year Rs.	2nd year Rs.	3rd year Rs.	4th year Rs.	5th year Rs.	Total Rs.
Maintenance of poles & ropes	-	5,000	5,000	5,000	5,000	20,000
Stationary, posters and publicity material.	5,000	5,000	5,000	5,000	5,000	25,000
Oil & fuel charges	5,000	5,000	5,000	5,000	5,000	25,000
Other contingencies	15,000	10,000	10,000	10,000	5,000	50,000
Total:	25,000	25,000	25,000	25,000	20,000	1,20,000

STATEMENT - IV

Total Recurring Expenditure

Sl. No.	Item	1st year Rs.	2nd year Rs.	3rd year Rs.	4th year Rs.	5th year Rs.	Total Rs.
1.	Pay of Officers & establishment (Statement - 1)	28,400	29,500	30,600	31,600	32,700	1,52,800
2.	Allowances (Statement-II)	24,880	25,650	26,420	27,120	27,890	1,31,960
3.	Contingencies (Statement-III)	25,000	25,000	25,000	25,000	20,000	1,20,000
Total:		78,280	80,150	82,020	83,720	80,590	4,04,760

STATEMENT - V
Non-recurring Expenditure

Sl. No.	Item	Ist year Rs.	2nd year Rs.	3rd year Rs.	4th year Rs.	5th year Rs.	Total Rs.
1.	Cost and erection of 2000 poles & 6000 ropes in a phased manner from Ist to 3rd year	75,000	75,000	1,50,000	-	-	3,00,000
2.	Type writer	3,000	--	--	-	-	3,000
3.	Furniture	5,000	--	--	-	-	5,000
4.	Jeep with trailer	50,000	--	--	-	-	50,000
5.	Community shed & Store	30,000	--	--	-	-	30,000
Total:		1,63,000	75,000	1,50,000	-	-	3,88,000

STATEMENT - VI

Total Recurring and Non-recurring Expenditure

Sl. No.	Item	Ist year Rs.	2nd year Rs.	3rd year Rs.	4th year Rs.	5th year Rs.	Total Rs.
1.	Non Recurring Expenditure (Statement V)	1,63,000	75,000	1,50,000	-	-	3,88,000
2.	Recurring Expenditure (Statement IV)	78,280	80,150	82,020	83,720	80,590	4,04,760
Total:		2,41,280	1,55,150	2,32,020	83,720	80,590	7,92,760

STATEMENT - VIIAnticipated Expenditure and Receipts

Item	Ist year Rs.	2nd year Rs.	3rd year Rs.	4th year Rs.	5th year Rs.	Total Rs.
Expenditure	2,41,280	1,55,150	2,32,020	83,720	80,590	7,92,760
Receipts*	40,000	80,000	1,60,000	1,60,000	1,60,000	6,00,000

* Calculated on the basis of anticipated minimal production.