STARTUPS IN FISHERIES

A Compendium of Business Plans of Microenterprises of SHGs

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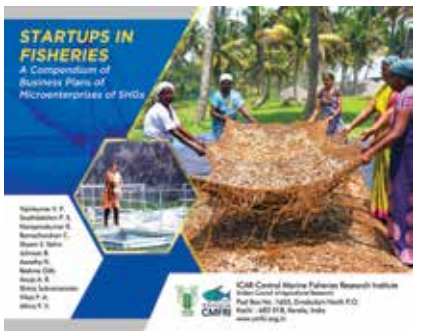

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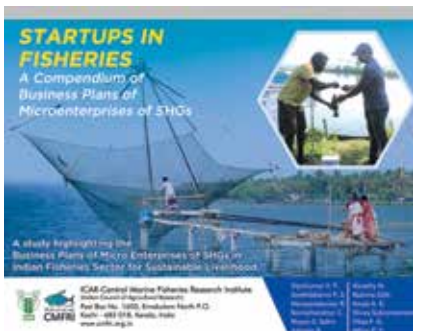

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FOREWORD

A. Gopalakrishnan
Director, ICAR-CMFRI

Fisheries sector provides employment to over 12 million people and plays a paramount role in Indian economy. Women constitute nearly half of the population and one third of the labour force. Though women's role in Indian marine fisheries sector with a coast line of 8129 km, is very prominent, there is generally a gender bias in respect of their works and the inequalities between men and women are observed in the social, cultural and economic lives. There are ample number of start-ups in fisheries for development and empowerment of weaker sections and gender mainstreaming in the Indian fisheries sector in a broader visualization will be materialized to a substantial extent with poverty eradication programmers through the transparent medium namely Self Help Groups (SHGs). However an in-depth analysis of the impact of SHGs in bringing out gender mainstreaming was meagre in the present scenario of Indian marine fisheries sector. Integrating gender perspective in SHG ventures in marine fisheries sector is inevitable because the gender mainstreaming approach advances gender equity and equality in the fisheries fabric of the society to proclaim business plans of the start-ups in the sector for sustainable livelihood.

The untiring perseverance of CMFRI as the premier Marine Fisheries Research Institute for more than seven decades of dedicated service in marine fisheries research brought out the ways and means to sustain the potential source of food in capture and culture fisheries scenario of the country. As the authentic data are scarce on impact of SHGs in gender mainstreaming among marine fisherfolk, it was imperative to make an effort to study the gender dimension of SHGs in marine fisheries sector as a project under the leadership of Dr.Vipinkumar V.P, Principal Scientist of CMFRI. The importance of the study in this regard was on assessing the impact of selected SHGs, studying the extent of empowerment of selected SHGs in terms of gender mainstreaming and identifying the relevant fishery based micro enterprises catering to the location specific needs of fisherfolk and imparting the Entrepreneurial Capacity Building (ECB) Training in fisheries sector by appropriate Human Resource Development intervention programmes and documenting the success stories of SHGs.The marine production front with a total landing of 3.54 million tonnes is maintaining its economic vibrancy. The completion of the Marine Census 2016 once again proves our competence in undertaking such nationwide exercises. As this project was undertaken in 5 maritime states, on gender mainstreaming and impact of SHGs, it gives a highlight on success stories of SHGs on ECB which significantly played the role in poverty alleviation. I appreciate the effort of the authors to bring out this compendium of business plans for the start-ups in fisheries sector based on the economic feasibility analysis of micro-enterprises.

(A. Gopalakrishnan)

PREFACE

Vipinkumar V.P.
& Project Team

Presently CMFRI, celebrating its '75th anniversary' after serving the Indian marine fisheries sector for more than seven decades, has emerged as a leading tropical marine fisheries research institute in the world, with an incomparable research acumen, indefatigable perseverance and unrestrained commitment which helped in heightening the marine fish production and management of the fisheries sector and for the livelihood of 40 lakh fisherfolk (9 lakhs households) of the motherland. In the meantime, out of the 9 lakh fisheries families, as almost 8 lakhs belongs to traditional sector and this sector contributes hardly 2 per cent of the 3.52 million tonnes of fish catch, the rest 98 per cent is the contribution of mechanized and motorized sectors. This is a thought infuriating issue that a deep contemplation must be given to this traditional fisheries sector and here comes the germaneness of the Self Help Groups (SHGs) and gender mainstreaming stratagems highlighting the startups in fisheries as a compendium of business plans of micro-enterprises.

The epitome of Gender mainstreaming is the strategy of bringing about equity and equality in all the domains of development and for this, is quite domineering that, the women are to be brought to the limelight in promotion of micro enterprises for sustainable livelihood boulevards. Experiences and observations so far signposted that 'Women Empowerment' will practically materialize through the far-reaching concept of Self Help Groups (SHGs). That is why out of the 40 lakhs SHGs existing in the country, 97 per cent belongs to those of women. For the present compendium of the fishery based micro-enterprises of SHGs, a candid endeavor was articulated on the economic feasibility analysis projecting the Break Even Point (BEP) and Pay Back Period (PBP) of the micro-enterprises of SHGs by personal interviews with the men and women counterparts of the families of SHGs separately with a pre-tested and standardized data collecting protocol in the maritime states such as Kerala, Karnataka, Tamil Nadu, Andhra Pradesh and Odisha. The Level of Performance and extent of empowerment of SHGs were gauged by standardized scales and indices. As much as 1000 SHGs were studied intensively and stage by stage video documentation of the success case studies was also undertaken. A series of products like animation films, training modules, pamphlets, bulletins, flyers and a compilation of 25 videos as gender mainstreaming series, ICT modules etc. were brought out as deliverable outputs of the study which can be used as case models or practical manuals for group action for mobilizing SHGs on a sustainable basis. This compendium is a ready reckoner of indicative economics of the startups in fisheries sector accomplished by SHGs to choose an appropriate micro-enterprise based on location specificity, technical feasibility and economic viability for a sustainable livelihood.

(Vipinkumar V.P.)

THE BACKGROUND

A study was made on the impact of 1000 selected 'Self Help Groups' (SHGs) in gender mainstreaming in marine fisheries sector. Their level of performance and extent of empowerment were assessed through appropriate indices of measurement based on data from SHGs of 30 different fishery based micro enterprises from 5 maritime states of India such as Kerala, Karnataka, Tamil Nadu, Andhra Pradesh and Odisha. The gender analysis and economic feasibility analysis based on personal interview and focus group interaction meetings with members of SHGs were undertaken. The male and female counterparts of the families of respondents were separately interviewed to assess the gender mainstreaming impact in terms of equity and equality to access and control over the resources, participation profile, decision making, gender need analysis etc. Analysis of data was essentially done with descriptive statistics such as mean, frequency, percentages, etc. As practical extension part, organized 250 fisherfolk interaction meetings and imparted 100 Entrepreneurial Capacity Building (ECB) Training programmes for the SHGs on the identified micro enterprises by HRD intervention programmes. The major micro enterprises of the SHGs studied were cage culture, bivalve farming, fish aggregating devices, Chinese dip net, clam processing, fertifish, fish amino acid, fish drying, seaweed culture, aqua tourism, seafood kitchen, value addition, fish vending, fish marketing, ornamental fish, ready to eat and cook items, fish feed, aquaponics etc. Economic Feasibility analysis was done for the fishery based micro enterprises accomplished by SHGs and developed Business Plans of the microenterprises representing the indicative economics projecting the break even and payback period of micro-enterprises. Documented 100 success cases on ECB of SHGs with special reference to gender perspective. Brought out 25 video documentaries as Gender Mainstreaming series on Impact of SHGs in Marine Fisheries Sector as success case studies elucidated which can be used as case model for promoting group action and as a practical manual for mobilizing SHGs in any key areas on a sustainable basis.

-INTRODUCTION-

The paradigm of 'Gender Mainstreaming' (GM) essentially emphasizes on judging the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a stratagem for making women's and men's concerns and experiences a vital dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres, so that women and men benefit equally and inequality is not perpetuated. Williams et al. (1995) traced the sequence of events leading to the involvement of Women in Fisheries programme and to the move towards Gender and Fisheries initiatives and some gender issues besetting the fisheries sector highlighted such as poverty, division of household labour, health, access to education and other rights, organizational culture and raising awareness and sharing knowledge. For the global community, gender equality is also a commitment, embedded in international human rights agreements and in the United Nations Millennium Development Goals (FAO, 2011, 2017).

The quintessence of GM stresses on a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The eventual goal is to achieve gender equality (ECOSOC, 1997). UNESCO (2000) gave a three-step approach to women's empowerment and gender equality consists of, GM perspective in all policy planning, programming, implementation and evaluation activities; promoting the participation of women at all levels and fields of activity, giving particular attention to women's own priorities and perspectives in redefining both the goals and means of development; and developing specific programmes and activities for the benefit of girls and women, particularly those that promote equality, endogenous capacity-building and full citizenship. The ultimate goal is to achieve gender equality and equity which aims to transform the mainstream at all levels to end gender discrimination. Equity is the 'means' and equality is the 'result'. Equality is rights based in such a way that women and men have equal rights, protected in international standards and treaties and should have same entitlements and opportunities. Equity means justice so that resources are fairly distributed, taking into account the diverse needs of women and men (Charlesworth, 2005; Kelly, 2005). Here in the present study, an attempt was made on the assessment of impact of SHGs on various fishery based microenterprises on gender mainstreaming in the selected maritime states of India.

METHOD

Under the project 'Mainstreaming the Gender Perspective of SHGs in Indian Fisheries sector', an attempt was made to assess the impact of 1000 Self Help Groups in the fisheries sector on 30 fishery based micro enterprises from 5 maritime states of India such as Kerala, Karnataka, Tamil Nadu, Andhra Pradesh and Odisha in gender mainstreaming in the marine fisheries sector. The level of performance and extent of empowerment of the SHGs were measured through developed indices. The methodology adopted for the study was a pragmatic and sensible combination of extension research and practical extension management. The practical extension management part for the present study consisted of Awareness and Entrepreneurial Capacity Building (ECB) Training programmes systematically executed and then extension research part concentrated on socio economic surveys with a pre-tested and structured data gathering protocol with standardized scales and indices.

With the assistance of State departments and NGOs, the research team of the Centre of Central Marine Fisheries Research Institute (CMFRI) visited the conspicuous locations of SHGs and conducted communication conclaves and interaction programmes for the SHG members. A series of farmer collaboration conclaves were organized for the identified SHGs engaged in 30 different fishery based micro enterprises. Done the gender analysis and economic feasibility analysis based on personal interviews and focus group interaction meetings with SHG members. The male and female counterparts of the families were separately interviewed to assess the gender mainstreaming impact in terms of equity and equality to access and control over the resources, participation profile, decision making, gender need analysis etc. Data analysis was done with descriptive statistics such as mean, frequency, percentages etc.

The Level of Performance of SHGs (NABARD,2007, Shalumol, 2015) was evaluated by the checklist agenda containing the parameters developed by NABARD such as Group size, Type of members, Number of meetings, Timings of meetings, Attendance of members, Participation of members, Savings collection within the group, Amount to be saved, Interest on internal loan, Utilization of savings amount by SHG, Loan recoveries, Maintenance of books, Accumulated savings, Knowledge of the rules of SHG, Educa-

DOLOGY

tion level, Knowledge of Govt. programmes etc. arranged in 3 point continuum. Likewise, the 'Empowerment Index' was computed based on 8 dimensions (Meena et al, 2012) such as Confidence building, Self-esteem, Decision making pattern, Capacity building, Psychological Empowerment, Social Empowerment, Economic Empowerment and Political Empowerment. The extent of empowerment was measured as the difference between the scores obtained as per the perception of the SHG members before and after joining the SHG. For calculating the Empowerment Index, the scores obtained for each dimension were first made uniform and that was multiplied by the weightages assigned by the judges while relevancy rating for ascertaining the content validity of the scale through scale product method. Each of the dimension of Empowerment Index was computed by the scores of the sub-dimensions coming under the categories of these 8 dimensions. The Empowerment Index and Level of Performance of SHGs were quantified with the standardized interview schedules.

As the practical extension part, imparted 100 Entrepreneurial Capacity Building (ECB) Training programmes on the identified micro enterprises by appropriate HRD intervention programmes and organized 250 fisherfolk interaction meetings. Stage by stage video documentation in the various segments of activities of SHG was also done. Done the Economic Feasibility analysis of 30 fishery based micro enterprises accomplished by SHGs, and 30 allied sector microenterprises, captured video and developed Business Plans for the microenterprises. For the economic feasibility analysis, the Average Operating cost for the SHG enterprise was first calculated and then the Average Annual Net Return was estimated. After computing the total Fixed Cost, the Break Even Point (BEP) of the enterprise was computed as Fixed Asset / (Profit per unit—Variable cost per unit). The Pay Back Period (PBP) i,e the years the unit takes to break even was estimated as Initial Investment / Net Profit, which was found to be the number of years or time period for the product to reach the breakeven point which indicated the profitability of that particular enterprise. (Vipinkumar *et al*, 2018, 2020). The main constraints faced by the women entrepreneurs while doing the different income generating activities related to fisheries were analysed for making strategic recommendations.

Major Upshots and discussion

Empowerment Index components and Level of Performance of SHGs

As practical extension part, 250 fisherfolk interaction meetings were organized and imparted 100 Entrepreneurial Capacity Building (ECB) training programmes for the SHGs on the identified micro enterprises by HRD intervention programmes. For each SHG, the score obtained for the dimensions of Empowerment Index contributing to the overall empowerment Index and Level of Performance of 1000 SHGs were quantified with the standardized data gathering protocols and are presented in the following Table. It is apparent from the table that, among the 8 dimensions of empowerment, the Economic dimension has the highest average score (0.835) followed by Self Esteem (0.798) and Psychological Empowerment (0.790). The overall empowerment index for the entire SHGs was 0.785 and the level of performance was 69.54 per cent. An ephemeral depiction of the average Level of Performance and Empowerment Index of SHGs of various fishery based microenterprises with indicative economics is given in the next Table.

Table : Empowerment Index components and Level of Performance of SHGs (n=1000)

No	Dimensions	Average Score
1	Confidence building	0.779
2	Self esteem	0.798
3	Decision making Pattern	0.740
4	Capacity building	0.764
5	Psychological empowerment	0.790
6	Social empowerment	0.797
7	Economic empowerment	0.835
8	Political empowerment	0.779
9	Overall Empowerment Index (Average)	0.785
10	Level of Performance (Average)	69.54 per cent

Economic Feasibility Analysis of Micro enterpeises of SHGs

The Economic Feasibility Analysis of the various microenterprises handled by SHGs was undertaken by gathering data for the last 3 years on expenditure and returns to project the indicative economics of the SHG enterprises. The average operating cost and average net returns were worked out and the significant components assessed were the Break Even Point and Pay Back Period of these enterprises. The results are also presented in the Table. For the economic feasibility analysis, the Average Operating cost

for the SHG enterprise was first computed and then the Average Annual Net Return was assessed. Thereafter, as specified in the methodology, after calculating the total Fixed Cost, the Break Even Point (BEP) of the enterprise was estimated and the Pay Back Period (PBP) i,e the years the unit takes to break even was assessed, which was the time period in number of years for the product to reach the breakeven point which in turn underscored the profitability of that particular enterprise. Based on this economic feasibility analysis, documented 100 success cases on ECB of SHGs with special reference to gender perspective and also brought out 25 video documentaries as Gender Mainstreaming series on Impact of SHGs in the marine fisheries sector as success case studies (4 shortlisted in Women in seafood international video contest).

Table : Performance level, Empowerment Index and Economic Feasibility analysis of fishery based micro enterprises (n=1000)

Table: Performance Level, Empowerment Index and Economic Analysis of Fishery based microenterprises

Sl No	Micro Enterprise (Fisheries)	No of SHGs= 845	Avg. Level of Performance	Avg. Empowerment Index	@ (Rs)	Break Even Point	Pay Back Period (Years)
1	Cage farming unit	50	72.2	0.82	500	3616kg of Seabass	0.61
2	Mussel culture unit	60	76	0.84	400	110 kg of Heat shucked meat	0.09
3	Oyster culture unit	60	75.9	0.82	500	53kg of Shucked Meat	0.14
4	Seaweed farming unit	30	77.6	0.86	5	14134 kg of fresh sea weed	1.44
5	Clam processing unit	75	57.3	0.68	105	5559 Kg of Clam meat	0.61
6	Fish drying unit	60	70	0.78	120	4141kg of Dry fish	0.23
7	Seafood kitchen unit	18	78.7	0.88	250	4282 tickets	0.69
8	Aqua-tourism unit	15	78.9	0.88	250	4370 tickets	2.18
9	Pearl spot seed production Unit	10	67.5	0.79	10	23989 Pearl spot seed	0.17
10	Chinese dip net unit	12	79.2	0.89	300	918.3673 kg prawn	2.75
11	Fish cold storage unit	18	70	0.8	100	87438 Kg of fish sold	1.87
12	Quarry fish culture unit	20	58.8	0.64	250	364 kg of GIFT Tilapia	0.56

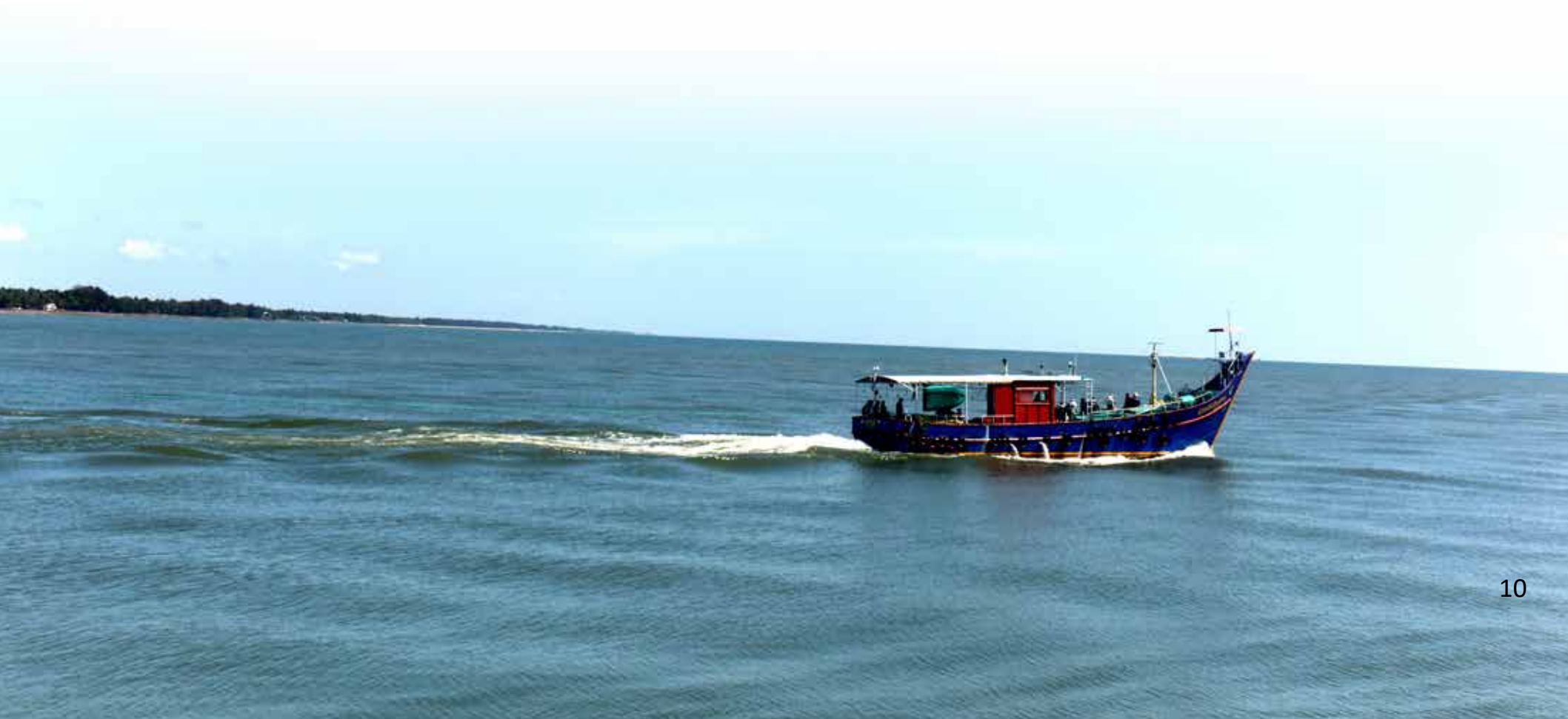
13	Fish Amino unit	22	75.4	0.84	25	548 Nos of 100 ml bottles	0.48
14	Fish fertilizer unit	20	72.8	0.82	360	1565 kg fish fertilizer	3.61
15	Ornamental fish culture unit	60	54.5	0.67	12	324605 fries	4.13
16	Aquaponics unit	40	60.2	0.71	150	643 kg Tilapia harvested	0.38
17	Fish pickling unit	75	72.3	0.83	700	340 kg pickle	0.37
18	Prawn peeling unit	30	59.6	0.69	269	4900 kg of prawn	1.69
19	Fish vending unit	70	69.2	0.78	226	7463 kg of fish sold	1.96
20	Fish booth unit	40	79.5	0.87	180	11305 kg fish	1.63
21	Clam collection unit	30	69.2	0.77	200	13636 kg clam	0.72
22	Hand picking- fishing unit	20	50.1	0.61	-	-	-
23	Fish aggregating devices (Social entrepreneurship)	10	80	0.89	-	-	-

The above Table can be used as a ready reckoner on the type of micro enterprises projecting BEP and PBP which gives a distinct picture about the type of the microenterprises suitable based on these indicative economics. Those enterprises with less than 1 year PBP can be chosen appropriately based on the technical feasibility, economic viability, location specificity etc. In the meantime, one enterprise pronounced in one location with a substantial BEP and PBP need not necessarily replicate the same result in a different location. Because the performance output of an enterprise of an SHG varies from time to time, from place to place and from situation to situation as it is influenced by a variety of factors.

To put it concisely, an ephemeral depiction of a pragmatic assessment of the various fishery based microenterprises (30 nos.) efficaciously being undertaken by Self Help Groups of fisherfolk from 5 maritime states of the country brought out a couple of valid suppositions. It was understood that, though the majority of the operations especially the labour intensive ones are male dominated, the female counterparts also do have a definite role in many of the conspicuous activities. The Scales of 'Performance Assessment' and 'Empowerment Index' developed for this study have good potential for future use in other key areas on a maintainable basis. Lacunae identified in Empowerment Index computation give ample and adequate feedback to authorities to proceed in the right direction. The economic feasibility analysis gives a vivid picture of the appropriateness of the microenterprises to be chosen

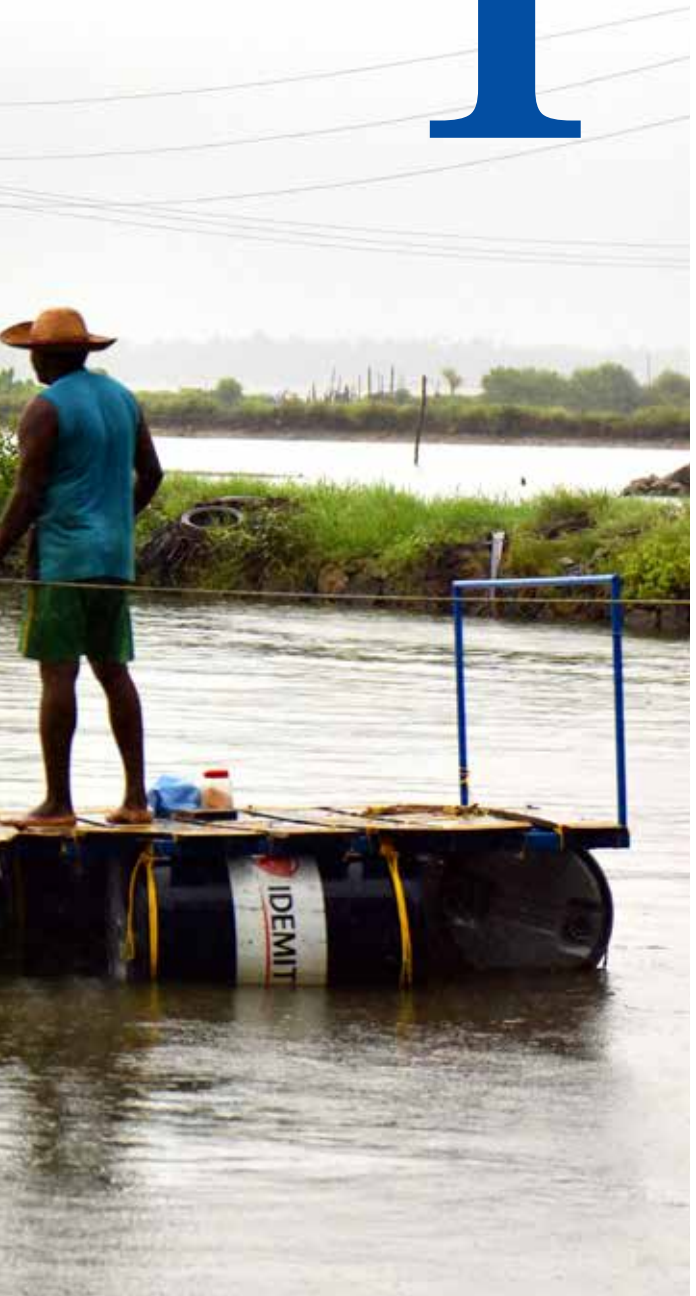
based on Break Even Point and Pay Back Period of various fishery based enterprises for livelihood enhancement. The inferences drawn from the gender dimension analysis on mainstreaming aspect give amble sensitization on crucial issues like women fisherfolk's rights and marketing channels for policies and other interpolations on gender. It could be alluded that, an exhaustive research with larger sample and wider area would be of plentiful scope. Interrelationships between the variables can act as catalytic points for group action and group empowerment on a sustainable basis. Success case lessons expounded and brought out as videos on various fishery based technologies by the project authorities of CMFRI can be used as a practical guidance manual for marshaling and mobilizing SHGs in similar allied segments on a sustainable basis.

This e book as a capsule of business plans developed from the economic feasibility analysis of the major fishery based enterprises which can act as practical manual of startups in fisheries by SHGs on a sustainable fisheries.



Cage Farming SHGs

1



Cage farming SHGs

The cages constructed by SHGs of fisherfolk in Vembanadu lake in Srayithode and GI cages in Kambithazham of Edavanakkad and Manjanakkad of Narakkal were taken into consideration for assessing the indicative economics.

Cage culture of fish in brackish water pond with the recommended candidate species such as Asian Seabass and Pearl spot undertaken in these locations for a culture period of 10 months was taken into consideration for projecting the indicative economics

Table: Economic analysis of cage culture of finfish (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure	10	80000	800000						
Cage 10m X 5m with GI frame									
Total fixed cost			800000						
Variable Expenditure									
Asian Seabass seed	10000	40	400000	10000	40	400000	10000	40	400000
Pearl spot seed	2000	10	20000	2000	10	20000	2000	10	20000
Seabass feed			1344000			1344000			1344000
Pearl spot feed			20000			20000			20000
Total Variable Cost			1784000			1784000			1784000
Depreciation on capital investment, @20%			160000			160000			160000
Insurance premium @ 2% of the capital investment			16000			16000			16000
Interest on 75% of the capital investment @12% per annum			72000			72000			72000
Administrative/Other expenses @ 1% of 75% capital investment			6000			6000			6000
Total Annual Operating Cost (Rs.)			2038000			2038000			2038000
Income from Seabass production (6400 Kg @Rs.500)	6400	500	3200000	6400	500	3200000	6400	500	3200000
Income from Pearl spot production (240 Kg @Rs.600)	240	600	144000	240	600	144000	240	600	144000
Gross Return			3344000			3344000			3344000
Net Returns			1306000			1306000			1306000
BC ratio			1.64						

Average Annual Net Return = Rs 1306000

The total Fixed Cost = Rs 800000

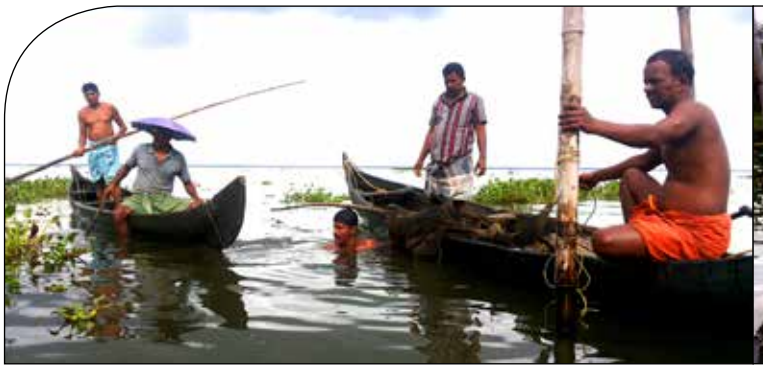
The Break-Even Point (BEP) = 3616kg of Seabass @Rs.500/kg

Pay Back Period = 0.61 years

Price per product (P) = Rs 500

Cost per unit (C) = Rs 278.8

P-C = 221.3




FARMER TRAINING PROGRAM
DST SPONSORED PROJECT

Bivalve Farming SHGs

2

Bivalve Farming SHGs

The practical dissemination of mussel culture in the coastal belt of potential maritime locations in Malabar coasts was undertaken in Kadalundy areas of Vallikkunnu panchayat in Malappuram district of northern Kerala by training 62 women fisherfolk with the Community Development Scheme (CDS) of the Kudumbasree District Mission of the panchayat. Similarly, Kasargod, the extreme northern district of Kerala is particularly notable for mussel and oyster farming and in Padanna panchayat, it has been successfully accomplished by the women's SHGs. CMFRI also imparted training on edible oyster culture in Moothakunnam areas of Vadakkekkara grampanchayat in Ernakulam district with a successful demo which also attracted SHGs mobilised by Kudumbashree District Mission. There were 35 SHGs mobilised by women who successfully undertook oyster farming with 545 beneficiaries. The following results are the highlights of these locations.

Table: Economic analysis for a model mussel farm (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Bamboo poles (9=poles + 10 horizontal poles)	19	350	6650						
Nylon rope (3mm/4mm) (Kg)	1	250	250						
Nylon rope (12mm) (Kg)	13	250	3250						
PVC pipe (2.5 "/3") for seeding in pre stitched tubes (m)	1	100	100						
Total Fixed Cost			10250						
Variable Expenditure									
Stitching charge	100	7	700	100	7	700	100	7	700
Canoe hire charges (days)	5	300	1500	5	300	1500	5	300	1500
Labour charges (farm construction, seeding and harvesting (days)	8	850	6800	8	850	6800	8	850	6800
Mussel seed (20-25 mm) kg	150	50	7500	150	50	7500	150	50	7500
Cotton netting materials (m)	25	40	1000	25	40	1000	25	40	1000
Marketing (shell on) **(kg)	800	25	20000	800	25	20000	800	25	20000
Miscellaneous	1	1000	1000			1000			1000
Labour charges (Meat shucking)									
Depuration charge * (per kg)	800	6	4800	800	6	4800	800	6	4800
Shucking charge (per kg)	200	30	6000	200	30	6000	200	30	6000
Fuel charges			2000			2000			2000
Marketing (per kg)	200	50	10000	200	50	10000	200	50	10000
Total Variable Cost			61300			61300			61300
Interest on fixed cost			1025			1025			1025

Depreciation			1025			1025			1025
Total operational cost			63350			63350			63350
Returns									
Shell on in kg (8kg/rope)	800	120	96000	800	120	96000	800	120	96000
Heat shucked meat in kg (25% meat)	200	400	80000	200	400	80000	200	400	80000
Gross Revenue			176000			176000			176000
Net income			104450			104450			104450

Average Annual Net Return = Rs 104450

The total Fixed Cost = Rs 10250

The Break-Even Point (BEP) = 110 kg of Heat shucked meat @ Rs. 400/kg

Pay Back Period = 0.09 years

Price per main product fresh form (P) = Rs 400

Cost per unit (C) = Rs 306.5

P-C = 93.5

Table: Economic analysis of Oyster unit (Cost/Price in Rs)

Particulars	**First year**			**Second year**			**Third year**		
	Units	**Unit Price**	**Price**	**Units**	**Unit Price**	**Price**	**Units**	**Unit Price**	**Price**
Fixed Expenditure									
Bamboo Poles(16 Poles+ 14 Horizontal Poles	30	320	9600						
Rope(Farm construc-tion) 3mm (Kg)	2	250	500						
Rope (Ren making) (kg)	6	250	1500						
Total Fixed Cost			11600						
Variable Expenditure									
Shell	1500	0.5	750	1500	0.5	750	1500	0.5	750
Ren Making	300	2	600	300	2	600	300	2	600

Farm Construction (Labours)	2	850	1700	2	850	1700	2	850	1700
Installation of Spat Setters (Labours)	1	850	850	1	850	850	1	850	850
Harvesting (Labours)	4	850	3400	4	850	3400	4	850	3400
Canoe Hire Charges (Days)	5	250	1250	5	250	1250	5	250	1250
Depuration Charges (Kg)	1500	7	10500	1500	7	10500	1500	7	10500
Fuel Charges (Cylinder)	1	2000	2000	1	2000	2000	1	2000	2000
Shucking Charges (for Kg)	105	50	5250	105	50	5250	105	50	5250
Single Oyster Dec lumping	3000	1	3000	3000	1	3000	3000	1	3000
Total Variable Cost			29300			29300			29300
Interest on fixed cost			1160			1160			1160
Depreciation			1160			1160			1160
Total operational cost			31620			31620			31620
Returns									
Shell On	3000	20	60000	3000	20	60000	3000	20	60000
Shucked Meat	105 Kg	500	52500	105 Kg	500	52500	105 Kg	500	52500
Gross Returns			112500			112500			112500
Net Returns			80880			80880			80880

Average Annual Net Return = Rs 80880

The total Fixed Cost = Rs 11600

The Break-Even Point (BEP) Nos. of live oyster = 53kg of Shucked Meat @ Rs. 500/kg

Pay Back Period = 0.14 years

Price per unit (P) = Rs 500

Cost per unit (C) = Rs 279.0

P-C = 221.0

Seaweed Farming SHGs

3

Seaweed Farming SHGs

In India, cultivation of seaweed, *Kappaphycus alvarezii* was initially accomplished at Mandapam of Tamil Nadu during 1995–1997 (Eswaran *et al*., 2002) which was initiated by PepsiCo during 2002 and later taken over by Aqu Agri in 2008 (Narayanakumar and Krishnan, 2011). Many SHGs' of women were formed by the Corporate houses. Commercial cultivation of seaweed was started in 2005 along the Tamil Nadu coast. Now this is carried out in five coastal districts of Tamil Nadu namely Ramanathapuram, Pudukottai, Thoothukudi, Thanjavur and Kanyakumari. The present study was carried out based on the data gathered from 10 seaweed farming SHGs in Ramanathapuram district. Seaweed farming was adopted first in this district and Ramanathapuram district of Tamil Nadu coast was the major location where seaweed farming and collection are being intensively undertaken in larger scale. The methodology adopted for the study was a pragmatic and sensible combination of extension research and practical extension accomplished with the assistance of State departments and the research team of the Mandapam Regional Centre of Central Marine Fisheries Research Institute (CMFRI).

Table: Economic analysis of Seaweed culture SHG units (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure (for 45 rafts)									
3-4" dia hallow bamboos of 12'x 12' for main frame + 4' x 4' for diagonals (without any natural holes, crakes etc.,) @ Rs.5.50 per ft of bamboo	2880	352	15840						
Five-toothed iron anchor of 15 kg each (@ Rs.50 per kg) – one anchor can hold a cluster of 10 rafts	67.5	75	3375						

3mm PP twisted rope for plantation – 20 bits of 4.5m each (@ Rs.230 per kg)	18.98	97	4365						
Cost of HDPE braider pieces (20 pcs x 20 ropes = 400 pcs of 25 cm each) (@ Rs.330 per kg)	7.5	55	2475						
Raft framing rope 6m x 12 ties per raft i.e., 36mts of 4mm rope(@Rs.230 per kg)	29.35	150	6750						
Used HDPE fishing net to protect the raft bottom (4m x 4m size) (@ 70 Rs/ kg)	45	70	3150						
2mm rope to tie the HDPE net (28 mts) (@ Rs.230 per kg)	4.5	23	1035						
Anchoring rope of 10 mm thickness (17m per cluster of 10 rafts) (@ Rs.220 per kg)	4.5	22	990						
Raft linking ropes per cluster 10 rafts – 6mm thick – 2 ties x 3m x 9 pairs = 54m length (@ Rs.230 per kg)	4.5	23	1035						
Raft laying charges	45	33	1485						
Total Fixed Costs			40500						
Variable Expenditure (45 rafts)									
Seed material (150 gm x 400 ties @ Rs. 5.00 per Kg)	2700	5	13500	2700	5	13500	2700	5	13500
Braider twining charges	45	180	8100	45	180	8100	45	180	8100
Transportation	45	150	6750	45	150	6750	45	150	6750
Raft maintenance	45	450	20250	45	450	20250	45	450	20250
Miscellaneous expenses	45	30	1350	45	30	1350	45	30	1350
Total Variable Cost (45 rafts)	45	1107	49950	45	1110	49950	45	1110	49950

Interest on fixed cost10	40500	0.1	4050	40500	0.1	4050	40500	0.1	4050
Depreciation (30%)	40500	0.3	12150	40500	0.3	12150	40500	0.3	12150
Total Operating Costs (in Rs.)		1440	66150		1470	66150		1470	66150
Returns									
Annual seaweed production (190 kg/raft)* (Retaining 60 kg for next crop, total seaweed production from 45 rafts; 4 cycles)			23400			23400			23400
35 % of total seaweed production is sold in fresh form	8190	5	40950	8190	5	40950	8190	5	40950
Remaining 65% of total seaweed production is sold in dried form (15,210 kg will give 1,521 kg of dried seaweed)	1521	35	53235	1521	35	53235	1521	37.5	57037.5
Gross Revenue			94185			94185			97987.5
Net income			28035			28035			31837.5

The Average Operating cost = Rs 66150

Average Annual Net Return = Rs 29302.5

The total Fixed Cost = Rs 40500

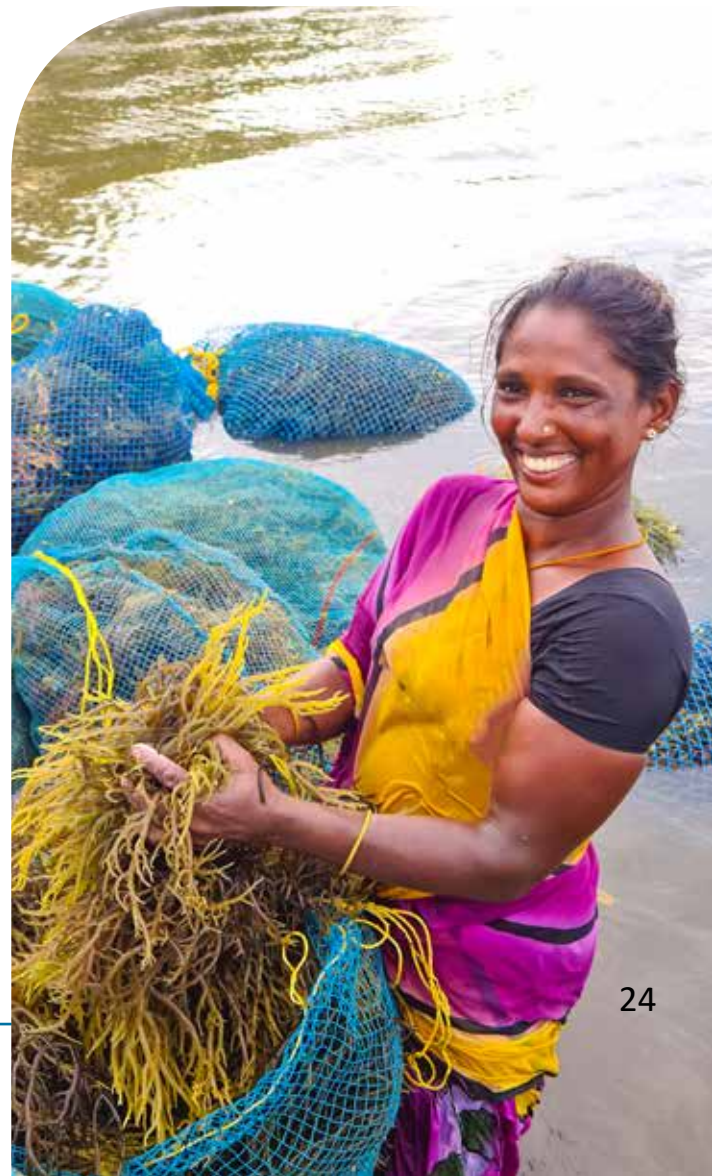
The Break-Even Point (BEP) = 14134 kg of fresh sea weed @ Rs. 5/kg

Pay Back Period = 1.44 years

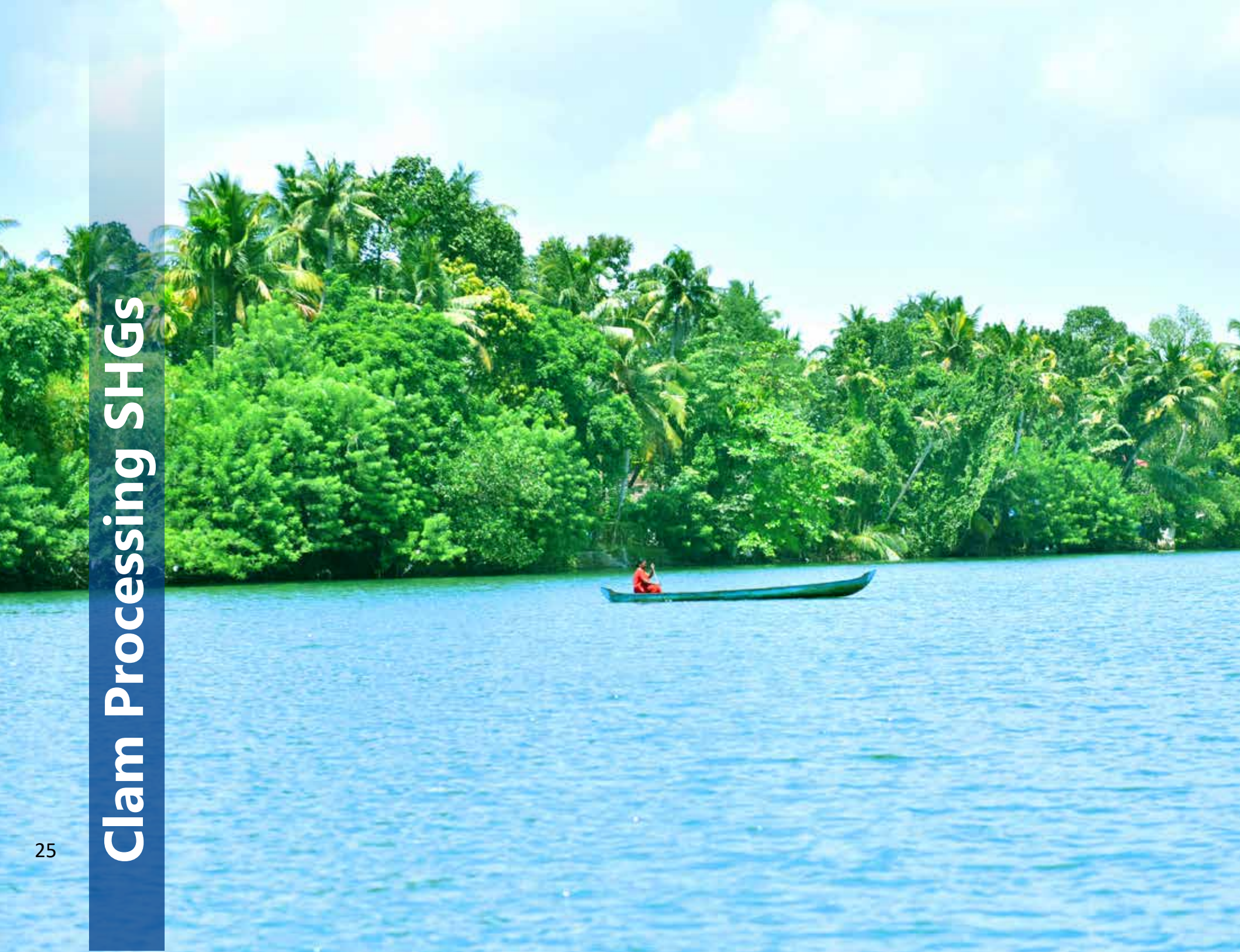
Price per main product fresh form (P) = Rs 5

Cost per unit (C) = Rs 2.1

P-C = 2.9



Clam Processing SHGs



4

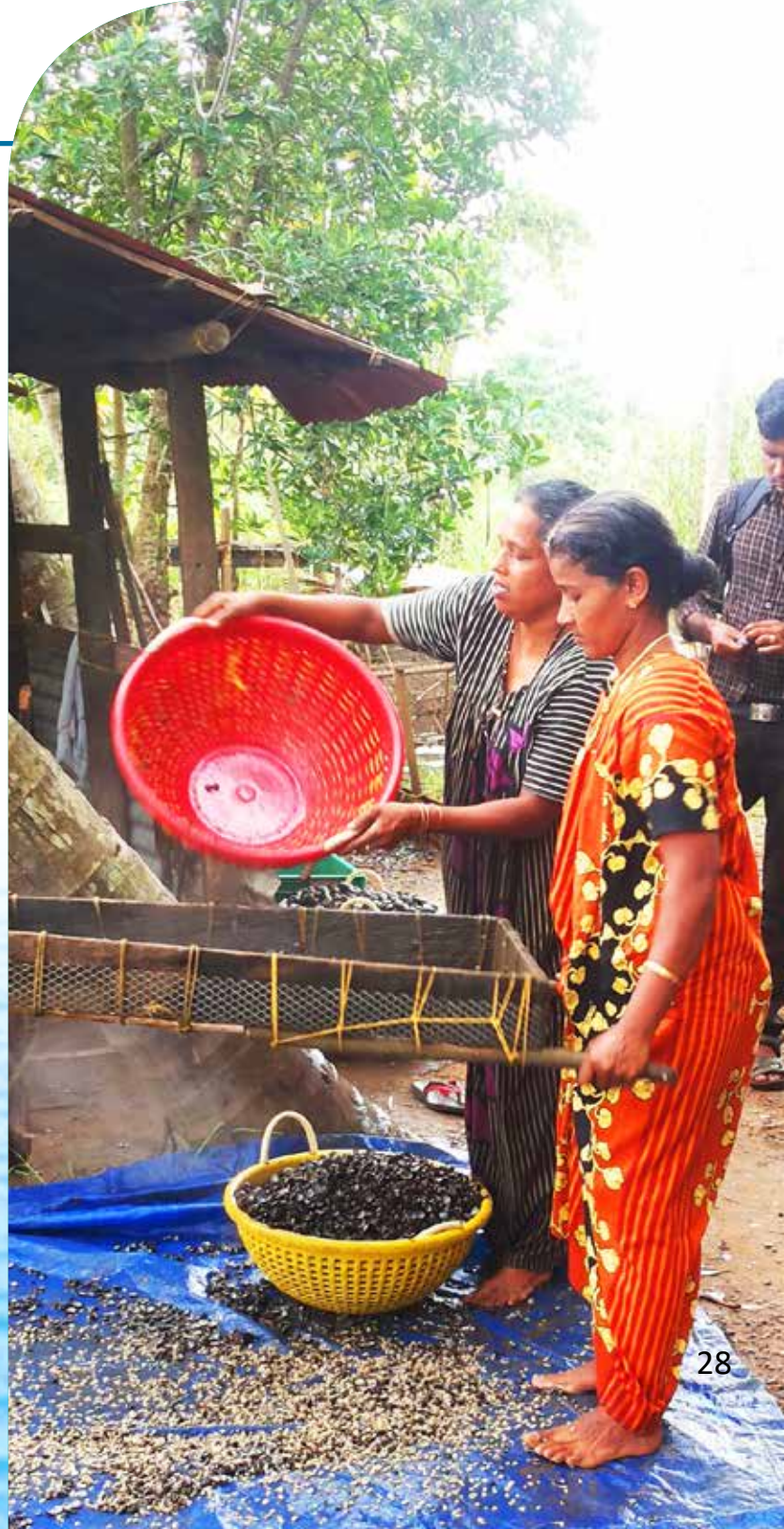
Clam Processing SHGs

Pookaitha is a conspicuous island with lush greenery and beautiful river banks in Kottayam district situated in the border of Alappuzha. There are 42 families residing in this exquisitely pretty island. SHGs of women in Clam Processing brought out a couple of development initiatives in the fisheries sector. Two SHGs named Samudra and Pavizham were mobilized under Theeramythri project of SAF (Society for Assistance to Fisherwomen) with technical training in Clam Processing. The income generated out of this entrepreneurial venture has become one of the major means of livelihood reflected in 8 families of the members of these SHGs.

Table.3 Economic analysis of Clam Processing SHG units (Cost/Price in Rs)

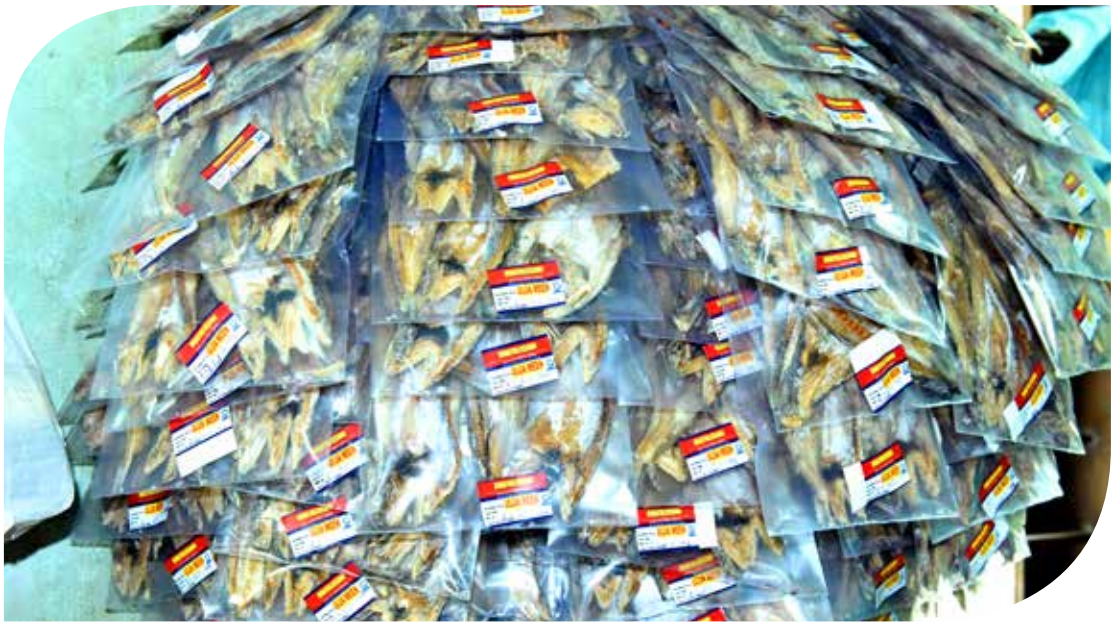
Particulars	First year			Second year			Third year			Fourth year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure												
Stove	1	5000	5000									
Weighing Balance	1	5000	5000									
Clam sorter sieve	1	6000	6000									
Utensils	8	1921.25	15370									
Furniture	7	807.14	5650									
Miscellaneous			3000									
Total Fixed cost			40020									
Variable Expenditure												
Raw Clams (Kg/Rs)	37062	1.76	65365	29290	1.84	53765	36500	1.8	65700	36905	1.8	66430
Firewood (Kg/Rs)	2400	5	12000	2500	5	12500	2429	4.98	12100	2230	5.22	11650
Ice (Kg/Rs)	4050	2	8100	2880	2	5760	3120	2	6240	3240	2	6480
Rent (1000 /Month)			12000			12000			12000			12000
Wages (Rs.600 for 225 Man-days)			135000			135000			135000			135000
Transportation			3000			2500			1800			1500
Miscellaneous			2000			1500			1500			1800
Total Variable Cost			237465			223025			234340			234860
Interest on fixed cost (10%/annum)			4002			4002			4002			4002
Depreciation (10% /annum)			4002			4002			4002			4002
Total Annual Operational Cost			245469			231029			242344			242864
Returns												
Main Product (Kg/Rs)	2449	100	244900	2046	100.04	204680	2484	107	265788	2527	112	283024
By Product (Kg/Rs)	25476	2.6	66238	21780	2.6	56628	23458	2.6	60990	23546	2.6	61219
Gross Return			311138			261308			326778			344243
Net Return			65669			30279			84434			101379

The Average Operating cost	= Rs 240426.5
Average Annual Net Return	= Rs 70440.25
The total Fixed Cost	= Rs 40020
The Break-Even Point (BEP)	= 5559 Kg of Clam meat @Rs.105/ Kg
Pay Back Period	= 0.61 years
Price per main product (P)	= Rs 105
Cost per unit (C)	= Rs 97.8
P-C	= 7.2



Dry Fish SHGs

5



Dry Fish SHGs

Tamil Nadu State with the second longest coastline in the country covers an area of 1,076 km comprising 13 coastal Districts. A number of entrepreneurial activities were taken up successfully in Ramanathapuram district of Tamil Nadu. To study the impact of SHGs in Gender mainstreaming on dry fish enterprise, a total of 10 units were randomly selected in Ramanathapuram district of Tamil Nadu. The SAF in Kerala also has mobilised dry fish producing units of women SHGs of 4 members each per group and such efficiently functioning SHGs in Sakthikulangara of Kollam district and Pallithode in Alappuzha district in Kerala state also were taken into consideration for the research study.

Table: Economic analysis of Dry fish SHG units (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Platform Drier	5	16000	80000						
Plastic Baskets	5	300	1500						
Sealing Machine	1	2000	2000						
Weighing Machine	1	4000	4000						
Granite Table	1	5000	5000						
Plastic Buckets with Lids	5	800	4000						
Plastic Crates	3	316.67	950						
Storage tank	2	12500	25000						
Plastic Sheets	2	2000	4000						
Miscellaneous			5000						
Total Fixed Cost (Rs.)			131450						
Variable Expenditure									
Raw Materials (Kg)	30000	40	1200000	28000	40	1120000	25000	40	1000000
Labour charge (Man-days)	300	600	240000	300	600	240000	300	600	250000
Building Rent			14000			14000			14000
Packing materials			40000			40000			40000
Electricity			10000			12000			13500
Water Charge			1500			2000			2200
Transportation			30000			32000			33000
Labelling			10000			10000			10000
Miscellaneous			5000			6000			6000
Variable Cost			1550500			1476000			1368700
Interest on fixed cost (10%/ annum)			13145			13145			13145
Deprecation (10% /annum)			13145			13145			13145
Total Operating Cost (Rs.)			1576790			1502290			1394990

Returns									
Dry fish (Quantity in Kg, Value in Rs.)	18000	120	2160000	16800	120	2016000	15000	120	1800000
Gross Return			2160000			2016000			1800000
Net Returns			583210			513710			405010

The Average Operating cost = Rs 1491357

Average Annual Net Return = Rs 500643.3

The total Fixed Cost = 131450

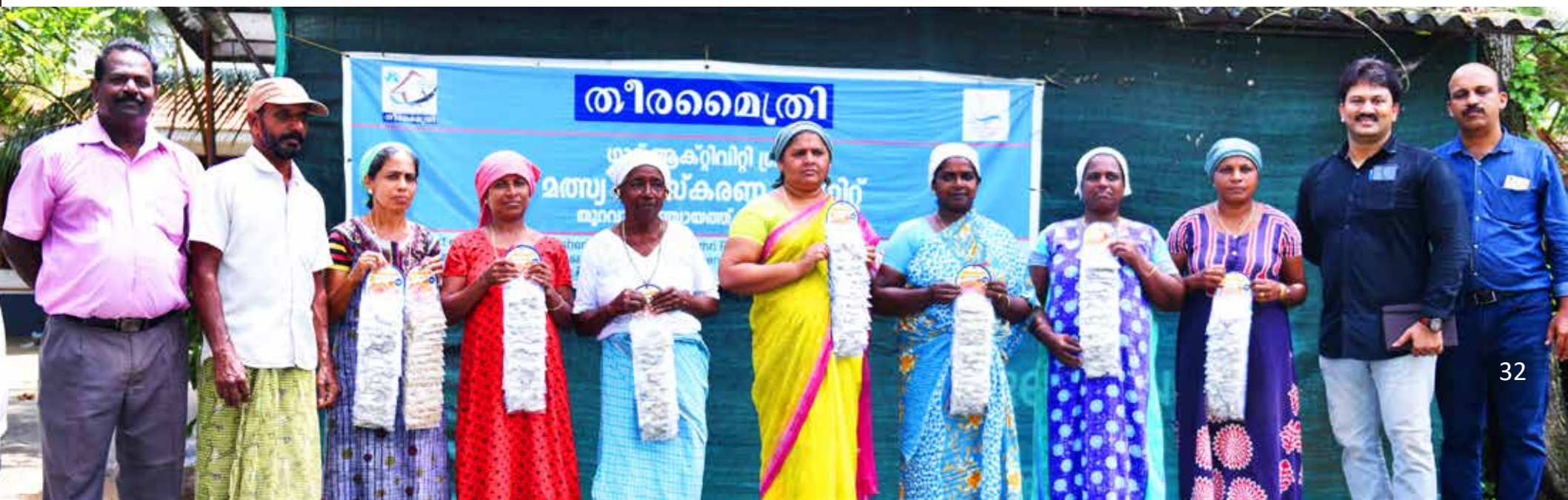
The Break-Even Point (BEP) = 4141kg of Dry fish @ Rs. 120/kg

Pay Back Period = 0.23 years

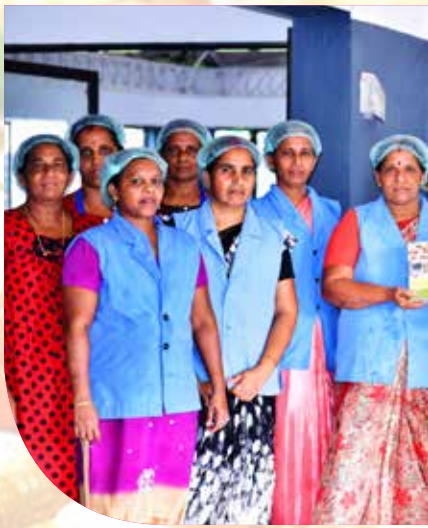
Price per main product(Rs/Kg) (P) = Rs 120

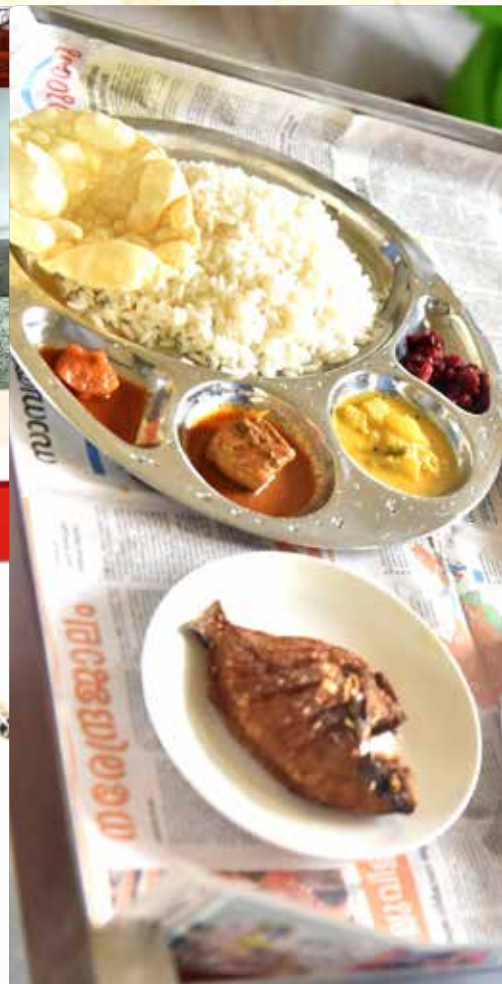
Cost per unit (C) = Rs 88.3

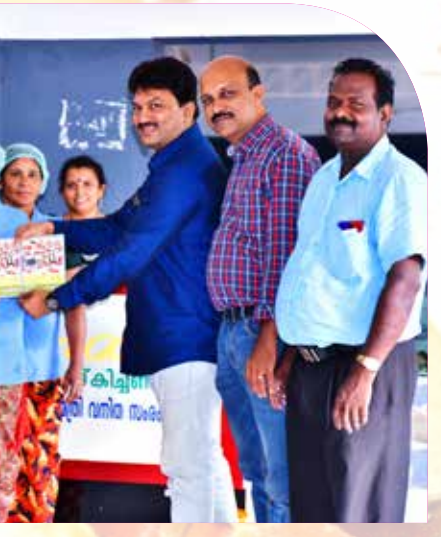
P-C = 31.7



Seafood Kitchen SHGs







6

Seafood Kitchen SHGs

Poyya Neithal Heritage Village is an exemplary example of women empowerment through mobilized SHGs. Poyya is a village in Mala Taluk of Thrissur district in the state of Kerala. The Seafood Kitchen venture made an effective role in uplifting the social status of poor women in Poyya grama panchayat. With the financial assistance of SAF, a small shop was first initiated by 'Neithal', a group consisting six women and now it became an enterprise which can provide job for nine women. Along with quality, tasty food providing special items such as pearl spot, prawn, crab, anchovies, squid, clam, mackerel etc. is the major speciality of "Amma" seafood kitchen. Along with this, the 'Theeramythri seafood kitchen' established for Scheduled Cast women in Pookode of Wayanadu district also was taken as a case study to compute the indicative economics.

Table: Economic analysis of Seafood Kitchen SHG units (Cost/Price in Rs)

Particulars	First year			Second year			Third year			Fourth year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure												
Burner stove	2	11000	22000									
Cooking Range	2	14000	28000									
Ss work table and rack (5)	5	8800	44000									
Three Sink unit	3	7666	23000									
Refrigerator	1	15500	15500									
Wet grinder	1	21000	21000									
Exhaust Fan	1	6000	6000									
Freezer with glass top	1	17400	17400									
Furniture			90950									
Thermal printer	1	14000	14000									
Utensils and Service wares			98950									
Total Fixed Cost			380800									
Variable Expenditure												
Provision items, Fish, Meat, Vegetables, Milk			750000			775810			911010			944600
Labour charge (Rs.2400 for 300 man-days)	300	2400	720000	300	2400	720000	300	2400	720000	300	2400	720000
LPG			17830			20900			24300			26100
Firewood			23000			22500			23800			23000
Current charge Rs.3000/month	12	3000	36000	12	3000	36000	12	3000	36000	12	3000	36000
Rent Rs.2500/month	12	2500	30000	12	2500	30000	12	2500	30000	12	2500	30000
Transportation			48000			48000			48000			48000
Telephone			12000			14000			14500			14500
Water charge			5000			5000			5000			6100
Packing materials			26000			29600			30400			33200

Office stationery			29000			24000			24000			24000
Miscellaneous			12000			12000			12000			12000
Total Variable Cost (Rs.)			1708830			1737810			1879010			1917500
Interest on fixed cost (10% / annum)			38080			38080			38080			38080
Depreciation (10%/annum)			38080			38080			38080			38080
Total Operating Cost (Rs.)			1784990			1813970			1955170			1993660
Return												
Fish curry meals	9000	60	540000	12000	60	720000	13500	60	810000	14150	60	849000
Sea food	8300	50	415000	9000	50	450000	9200	50	460000	9320	50	466000
Beef	8100	45	364500	9000	45	405000	8950	45	402750	9160	45	412200
Chicken	6250	55	343750	7500	55	412500	7860	55	432300	7950	55	437250
Breakfast Items	7950	30	238500	10500	30	315000	10800	30	324000	10930	30	327900
Veg/egg curry	7950	30	238500	10500	30	315000	10800	30	324000	10930	30	327900
Snacks	8300	7	58100	10500	7	73500	10980	7	76860	11250	7	78750
Hot beverages	7650	8	61200	9000	8	72000	9700	8	77600	9850	8	78800
Sweets	4900	5	24500	6000	5	30000	5400	5	27000	5200	5	26000
Cold	4100	12	49200	4500	12	54000	5100	12	61200	5260	12	63120
Gross Return (Rs.)			2333250			2847000			2995710			3066920
Net Returns (Rs.)			548260			1033030			1040540			1073260

The Average Operating cost = Rs 1886948

Average Annual Net Return = Rs 923772.5

The total Fixed Cost = Rs 380800

The Break-Even Point (BEP) = 4282 tickets @ Rs. 250 each

Pay Back Period = 0.69 years

Price per tickets = Rs 250

Cost per unit = Rs 161.1

P-C = 88.9

Aquatourism SHGs

7

Aquatourism SHGs

Njarakkal Aquatourism project by Matsyafed is a huge 125 hectare brackish water fish farm. It is located 15 kilometres from Kochi in a village called Narakkal. It has four culture ponds along with three nurseries. The fish farm almost lies inside the lake of Vembanad. The major type of fishes found in the farm includes prawns, pearlspot, mullets, tilapia, crab, green shell mussels etc. It is a popular Eco tourism project by the Matsyafed of the State Department. This tourist centre is a big aqua farm where we can enjoy the beauty as well as learn something new about farming of fishes. The similar aquaculture farm is in Malippuram also. These aqua farms and the brackish waters along with the alluring beauty is perhaps the most significant factor which makes them the prominent visit places of Kerala. Fishing is the most important sporting activity in Narakkal and Malippuram Aqua fish farms. The women SHGs namely 'Souparnika' of Narakkal and 'Vandanam' of Malippuram running the seafood cafeteria in Aquatourism farms were taken into consideration for economic analysis.

Table: Economic analysis of Aquatourism SHG units (Cost/Price in Rs)

Particulars	First year			Second year			Third year		Fourth year				Fifth year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure															
Single Burner Gas stove	2	11500	23000												
Community Choola	1	10000	10000												
Work Table SS	2	9000	18000												
Griller Dosa Plate	1	19000	19000												
2 Sink Unit	1	17000	17000												
Refrigerator	1	14000	14000												
Wet Grinder	1	12000	12000												
Freezer with glass top	1	17600	17600												
Furniture			105700												
Wooden Almirah	6	4325	25950												
Utensils, Serving Wares			97000												
Total Fixed Cost (Rs.)			359250												
Variable Expenditure															
Provision Items Fish, Milk, Meat etc.			318000			435800			448500			618600			737000
LPG			300000			300000			300000			385000			393000
Firewood			31000			32500			34500			35800			38900
Labour Charge (Rs. 1925 for 300 man days)			577500			577500			577500			577500			577500

Room Rent			24000			24000			24000			24000			24000
Electricity Charge			60000			60400			62400			73600			84300
Water Charge			9000			9500			9700			8900			11840
Packing Materials			40000			53000			59000			61600			68200
Office supplies			5500			5450			4980			4900			6200
Transportation			30000			35000			33500			52000			67200
Telephone			2400			2500			2600			2600			2600
Miscellaneous			4000			4500			4600			4700			4650
Total Variable Cost (Rs.)			1401400			1540150			1561280			1849200			2015390
Interest on fixed cost (10% / annum)			35925			35925			35925			35925			35925
Depreciation (10% /annum)			35925			35925			35925			35925			35925
Total Operating Cost (Rs.)			1473250			1612000			1633130			1921050			2087240
Returns															
Fish curry meals (Quantity in numbers, Values in Rs.)	9450	60	567000	10750	60	645000	13580	65	882700	15780	65	1025700	16130	65	1048450
Non Veg items (Quantity in numbers, Values in Rs.)	9040	80	723200	10100	80	808000	13600	80	1088000	15690	80	1255200	16750	80	1340000
Veg /Egg items (Quantity in numbers, Values in Rs.)	1580	30	47400	1675	30	50250	8760	30	262800	9570	30	287100	12330	30	369900
Breakfast Items (Quantity in numbers, Values in Rs.)	5160	30	154800	5310	30	159300	5530	30	165900	8385	30	251550	11250	30	337500

Tea snacks (Quantity in numbers, Values in Rs.)	2760	7	19320	3320	7	23240	4390	7	30730	9820	7	68740	10250	7	71750
Hot beverages (Quantity in numbers, Values in Rs.)	2400	8	19200	3615	8	28920	4350	8	34800	9940	8	79520	14460	8	115680
Cold beverages (Quantity in numbers, Values in Rs.)	1080	20	21600	1150	20	23000	1750	20	35000	6430	20	128600	14860	20	297200
Gross Return			1552520			1737710			2499930			3096410			3580480
Net Returns			79270			125710			866800			1175360			1493240

*Calculated BEP based on the number of tickets sold @ Rs.250 per each ticket

The Average Operating cost = Rs 1745334

Average Annual Net Return = Rs 748076

The total Fixed Cost = Rs 359250

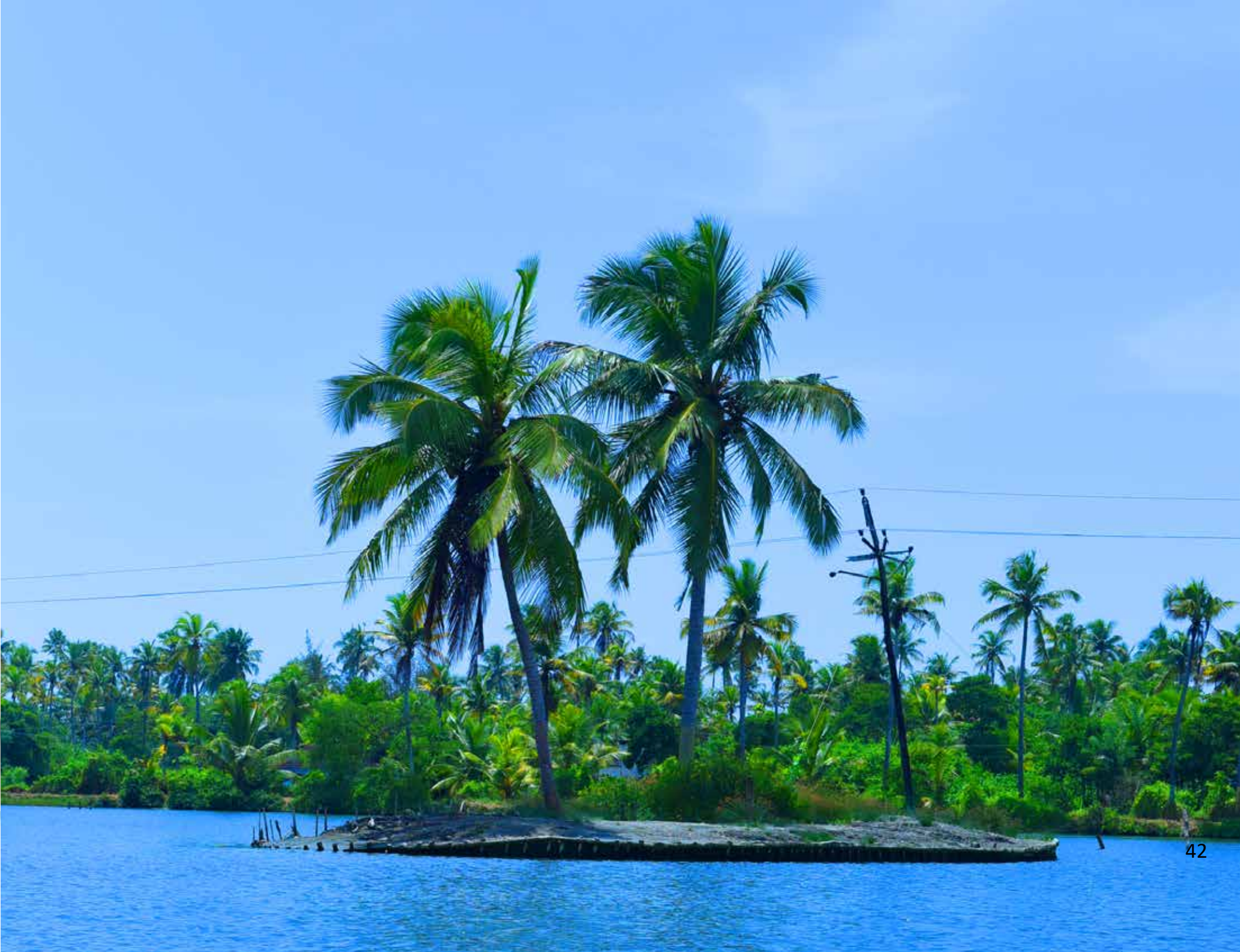
The Break-Even Point (BEP) = 4370 tickets @ Rs. 250 each

Pay Back Period = 2.18 years

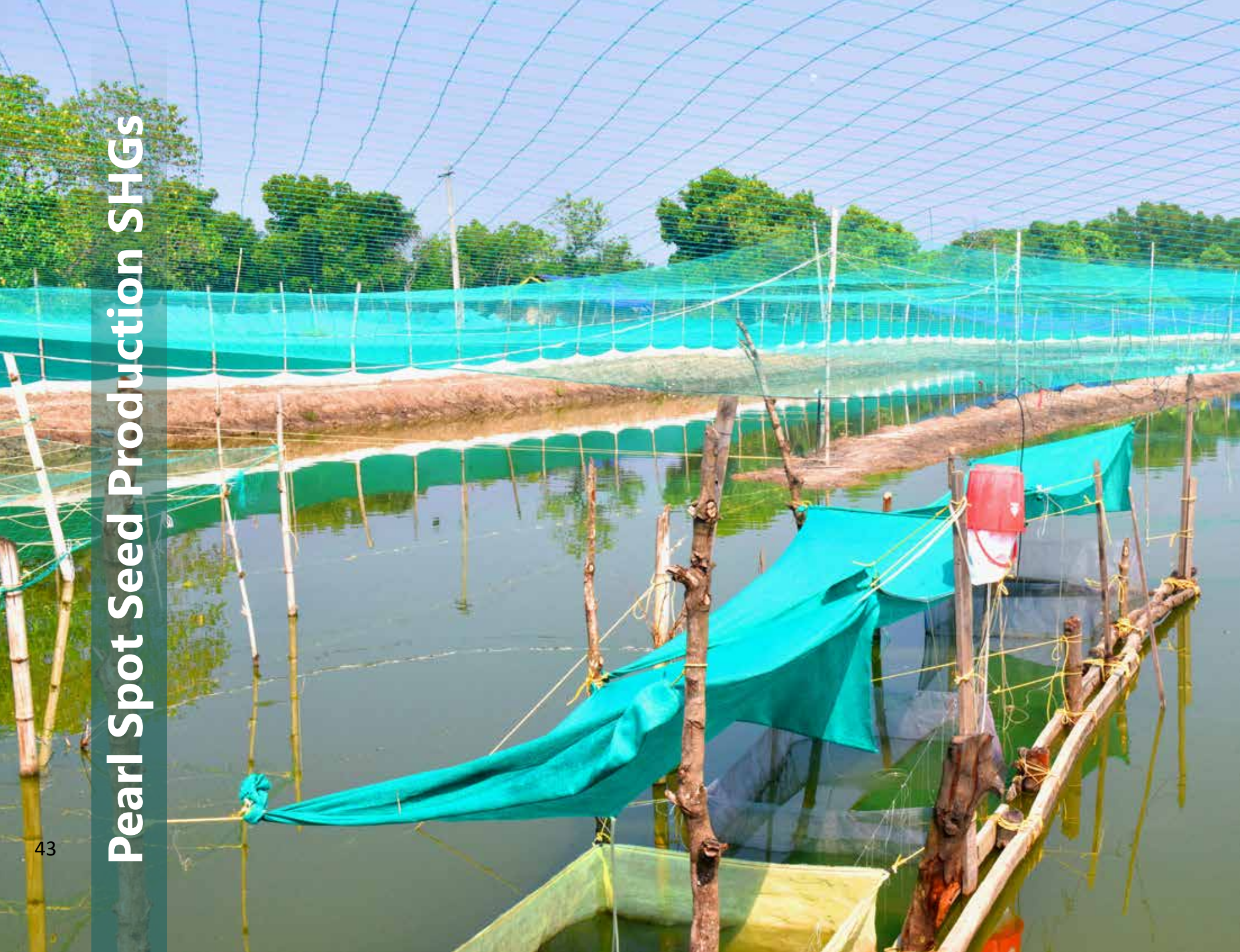
Price per main product (P) = Rs 250

Cost per unit (C) = Rs 167.8

P-C = 82.2



Pearl Spot Seed Production SHGs



8

Pearl Spot Seed Production SHGs

A successfully operating pearl spot seed production unit was established in Vallarpadom, of Ernakulam district of Kerala state by mobilizing SHGs for seed production technology of pearl spot. Under the project of Department of Science & Technology, New Delhi (DST), one SHG containing 12 members was mobilized and trained on seed production technology by the Krishi Vigyan Kendra (KVK) of CMFRI. The indicative economics projecting the profitability is presented here..

Table: Economic analysis of pearlspot seed production (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Seed collection unit and egg depositors	1	75000	75000						
Packing unit	1	20000	20000						
Bird fencing net	1	75000	75000						
Total fixed cost			170000						
Variable Expenditure									
Pond preparation cost			100000			100000			100000
Pearl spot brood fish	100	1250	125000	100	1250	125000	100	1250	125000
Pearl spot Pellet Feed	40	300	12000	40	300	12000	40	300	12000
Seed collection charges	1	150000	150000	1	150000	150000	1	150000	150000
Happa net and packing items		50000	50000		50000	50000		50000	50000
Total Variable Cost			437000			437000			437000

Depreciation on capital investment, @20%			34000			34000			34000
Insurance premium @ 2% of the capital investment			3400			3400			3400
Interest on 75% of the capital investment @12% per annum			15300			15300			15300
Administrative/ Other expenses @ 1% of 75% capital investment			1275			1275			1275
Total Annual Operating Cost (Rs.)			490975			490975			490975
Gross Return (Pearl spot seed sale 150000 nos @ Rs.10/ seed)	150000	10	1500000	150000	10	1500000	150000	10	1500000
Net Returns			1009025			1009025			1009025
BC ratio			3.06						

Average Annual Net Return = Rs 1009025

The total Fixed Cost = Rs 170000

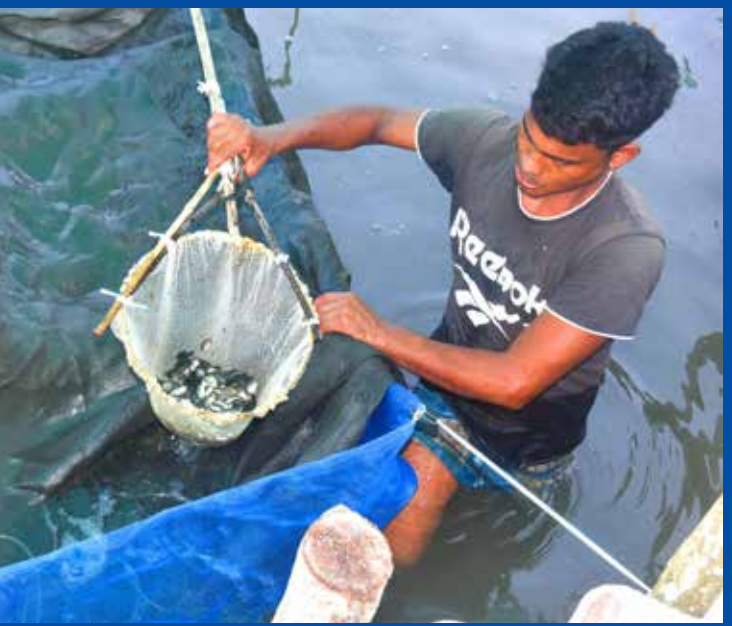
The Break-Even Point (BEP) = 23989 Pearl spot seed sold @ Rs..10/ seed

Pay Back Period = 0.17 years

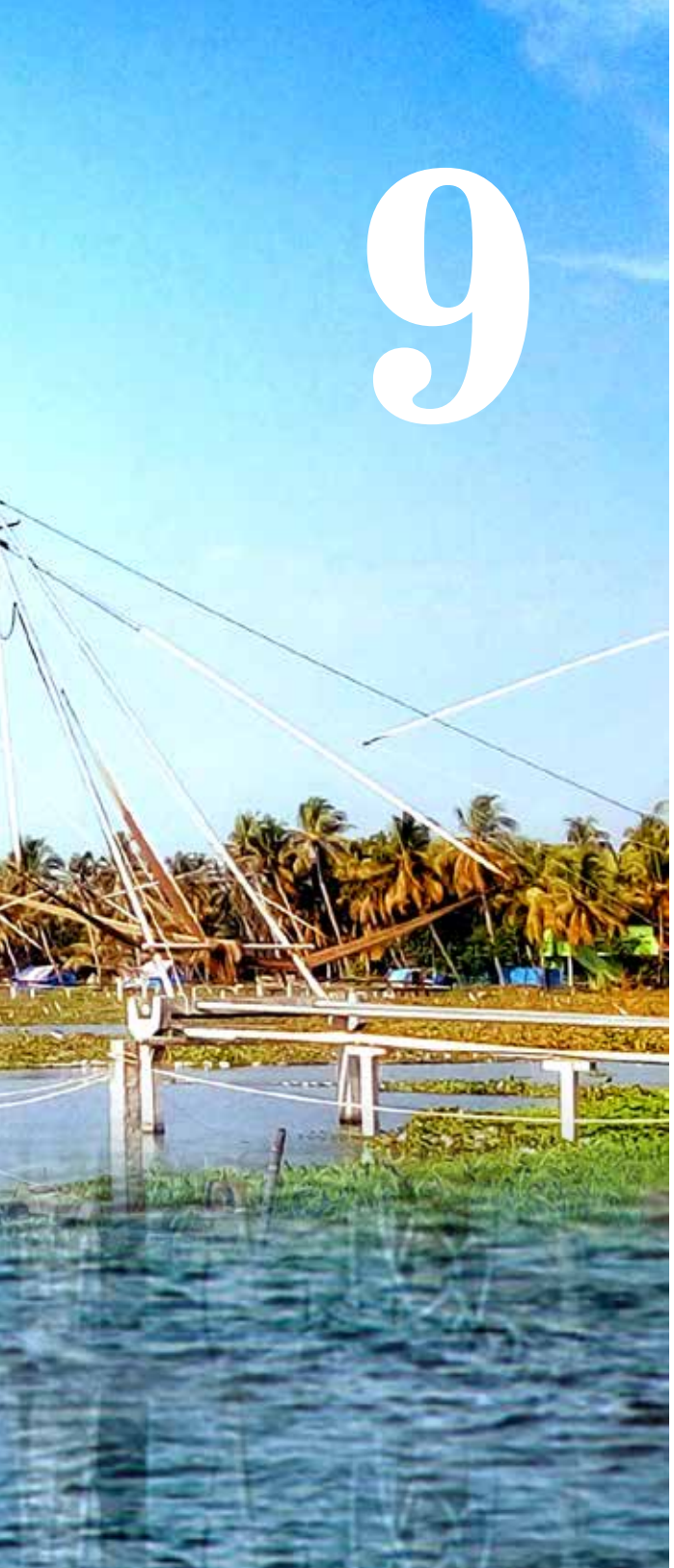
Price per product = Rs 10

Cost per unit = Rs 2.9

P-C = 7.1



Chinese Dip Net SHGs



9

Chinese Dip Net SHGs

Kumbalangi is a small island surrounded by brackish water well pronounced in Kochi, immensely rich with the presence of lakes, rivers and paddy fields proclaiming the tremendous agricultural potential.

The view of Chinese dips nets over the lakes and rivers is a conspicuous peculiarity in the island which often enlightens the water bodies during dusk. Under Kudumbasree of Kerala State Poverty Eradication Mission, a couple of empowered women made divergent thinking of operating the laborious enterprise of Chinese dip net and in 2009, twelve women of Anjilithara and Chuduckad Chira location formed 2 SHGs named Aiswarya and Pavizham. This new pioneering venture of Chinese dip net started operation with an initial investment of 1.5 lakhs which was equally shared

among 12 members of the SHG which was practically affordable to all. The Kumabalangi grama panchayat ensured good background assistance though Community Development Scheme (CDS) through Kudumbasree. As the progress was evaluated with reasonable profit margins, the groups installed the second Chinese dip net. The hectic venture believed to be operated only by men fisherfolk could be easily handled by a group of confident women fisherfolk probably for the first time in the historic time line of fishery based SHGs. It was an immense help and support to the families reflecting spectacular economic empowerment.

During the season period, they use to get items like prawn, crab etc other than fishes in the nets. Offseasons also assured a continuous availability of fish items on a sustainable basis. Those will be auctioned for sale at the markets and prices will be delivered on the spot. At present, they possess 2 Chinese dip nets, one small wooden boat and one gill net owned by them at their own cost worth 3.5 lakhs.

Table: Economic analysis of Chinese Dip Net (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Gear			25000						
Rope			35000						
Pole (Infrastructure creation)			120000						
Total fixed cost			180000						
Variable Expenditure									
Electricity (per month)			1000			1000			1000
Kerosene (per month)			1200			1200			1200
Maintenance (per month)			3000			3000			3000
Labour charge (Not included)			-			-			-
Total variable cost (per month)			5200			5200			5200
Total annual variable Cost			62400			62400			62400

Interest on 75% of the capital investment @12% per annum			16200			16200			16200
Depreciation on capital investment, @20% per annum			36000			36000			36000
Total Annual Operating Cost (Rs.)			114600			114600			114600
Returns									
Gross return (3 kg prawn/ day for 20 days @ Rs. 300/kg for 10 months in a year)			180000			180000			180000
Net return			65400			65400			65400
BC ratio			1.57						

Average Annual Net Return = Rs 65400

The total Fixed Cost = Rs 180000

The Break-Even Point (BEP) = 918.3673 kg prawn @ Rs. 300/kg

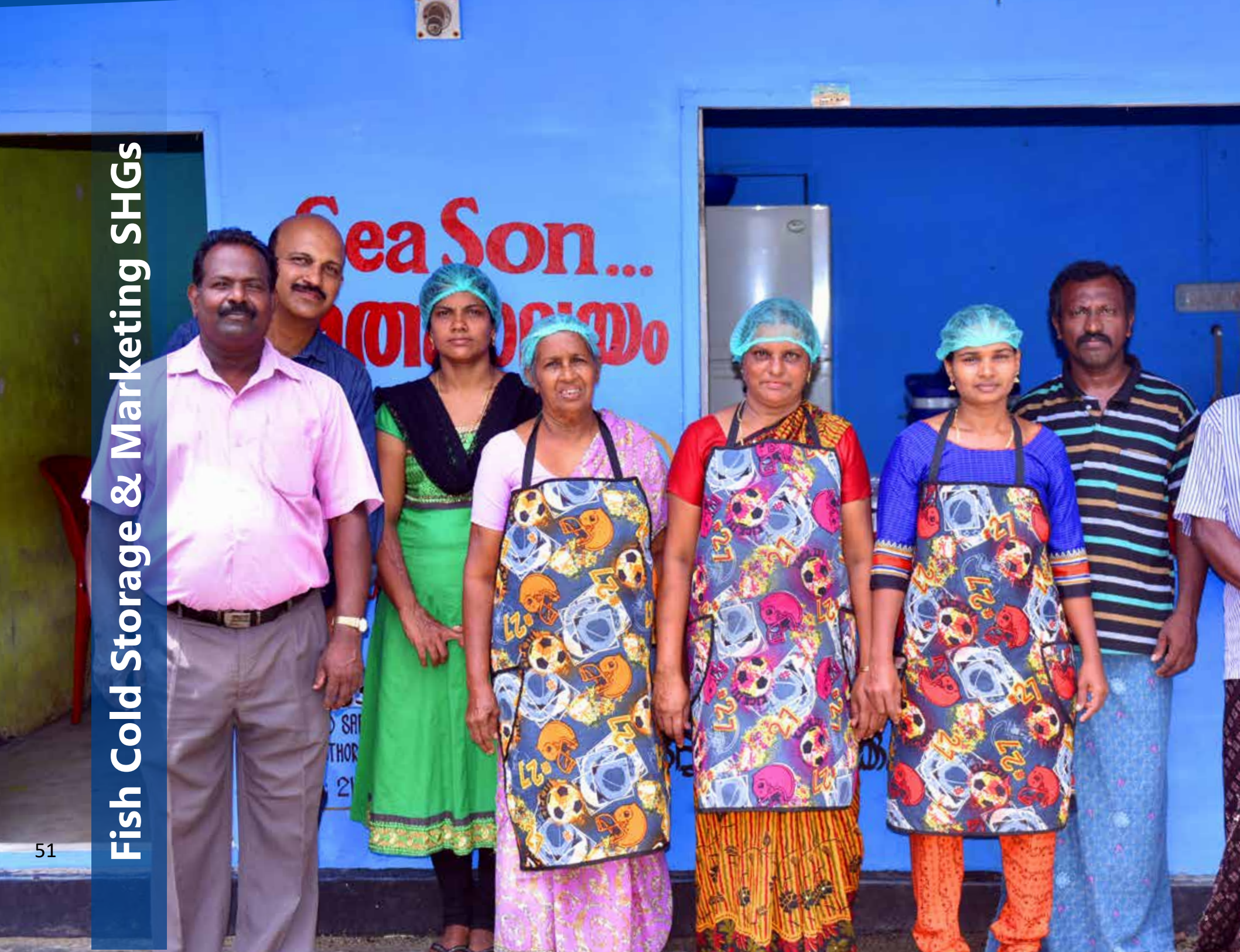
Pay Back Period = 2.752294 years

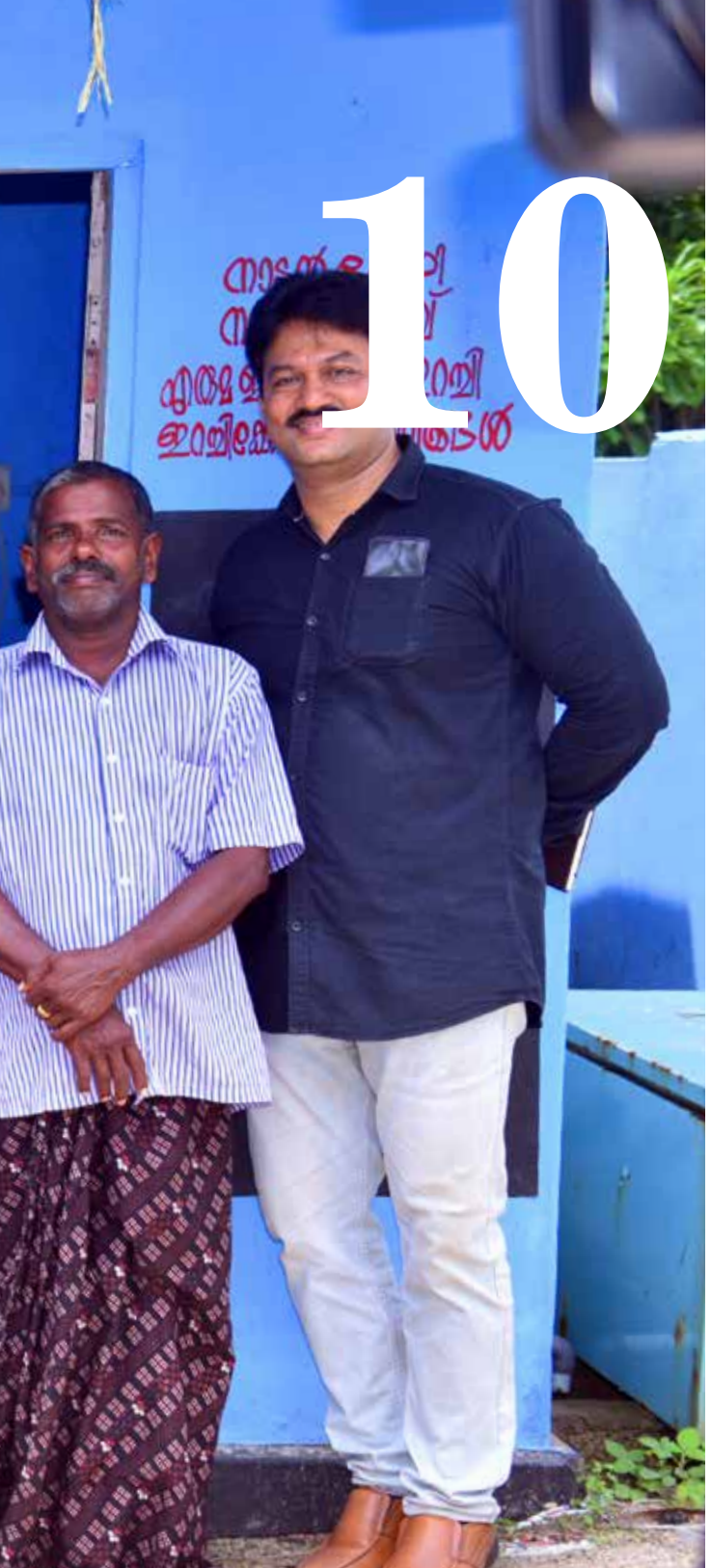
Price per unit product = Rs 300

Cost per unit = Rs 104

P-C = 196

Fish Cold Storage & Marketing SHGs





10

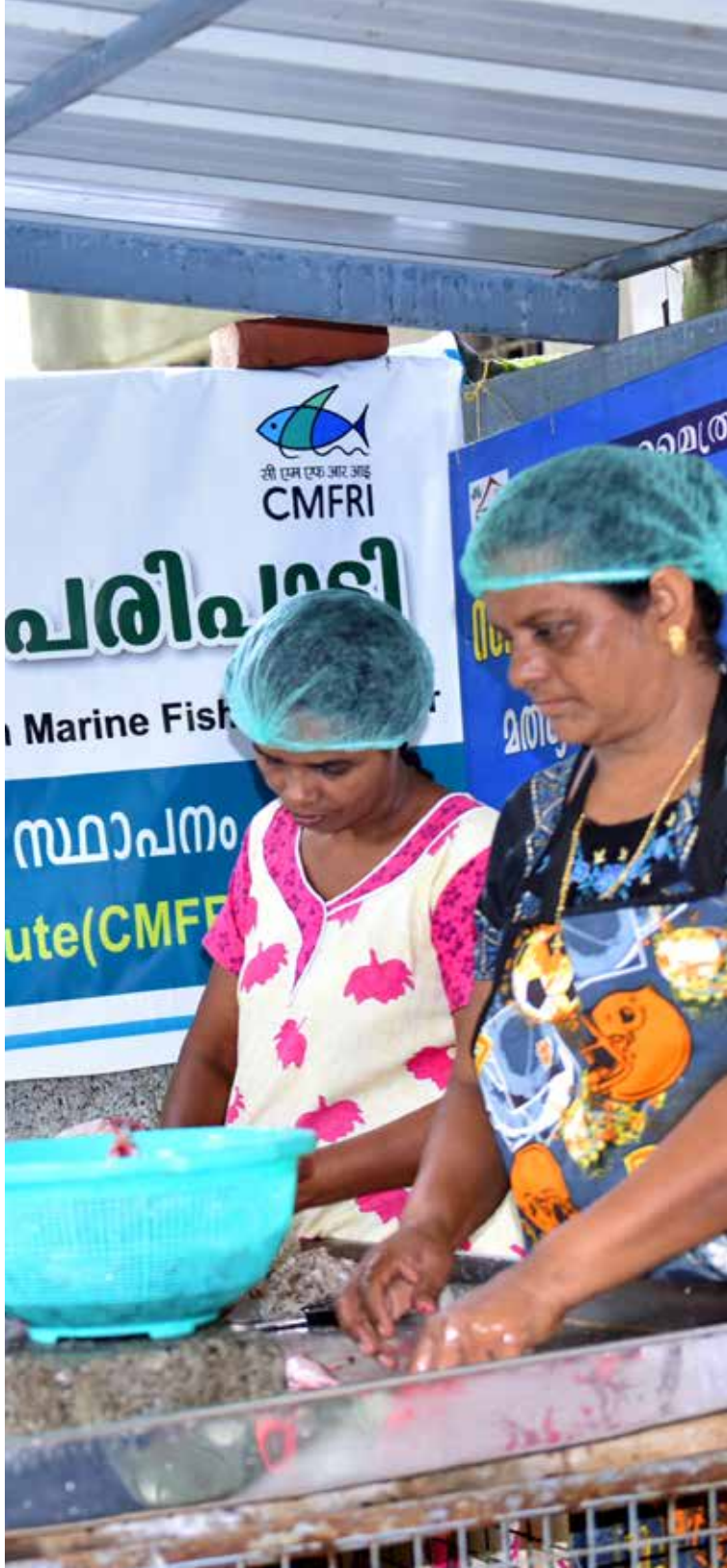
Fish Cold Storage & Marketing SHGs

Fish cold storage and marketing units run by women SHGs under Theeramythri project of SAF were studied and the indicative economics were assessed. The fish cold storage unit undertaken by the 'Season Matsyalayam' Activity group in Aroor of Alappuzha district consisting of 4 trained women members in an SHG, takes care of processing, storage and marketing of clean and fresh fish to the needy and demanding locations in hygienically packed stage. Indicative economics projecting the profit are presented here.

Table: Economic analysis of Fish Cold Storage & Marketing Units (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Stainless steel table	1	8000	8000						
Freezer	2	32000	64000						
Utensils	1	20000	20000						
Insulated ice box	15	3000	45000						
Electronic weighing machine	1	4000	4000						
0.5 HP motor	1	4000	4000						
Water tank 750 l	1	7000	7000						
Office table	1	3000	3000						
Plumping materials	1	6000	6000						
Electrical installation	1	4500	4500						

Plastic chair	3	450	1350						
Telephone	1	1300	1300						
Total fixed cost			168150						
Variable Expenditure/month									
Raw Fish (180kg /day)	5400	70	378000	9000	70	630000	9000	70	630000
Labour (3 labour per day)	60	800	48000	90	800	72000	90	800	72000
Rent	1	15000	15000	1	20000	20000	1	20000	20000
Electricity	1	13000	13000	2	12000	24000	2	12000	24000
Ice	1	12000	12000	1	16000	16000	1	16000	16000
Water Charge	1	6000	6000	1	10000	10000	1	10000	10000
Transportation (per day)	30	2000	60000	30	2500	75000	30	2500	75000
Packing Material	1	7800	7800	2	7800	15600	2	7800	15600
Telephone	1	4000	4000	1	4000	4000	1	4000	4000
Miscellaneous	1	6000	6000	1	6000	6000	1	6000	6000
Total Variable Cost per month			549800			872600			872600
Total variable cost (year)	12	549800	6597600			10471200			10471200
Interest on fixed cost (10%/annum)			16815			16815			16815
Deprecation (10% /annum)			16815			16815			16815
Total operational cost			6631230			10504830			10504830



Returns									
Gross Income (Selling of fish) (180 kg/Day for first year and 300 kg/Day second year onwards)	64800	100	6480000	108000	100	10800000	108000	100	10800000
Net income			-151230			295170	108000	100	295170

Average Annual Net Return = Rs 146370

The total Fixed Cost = Rs 168150

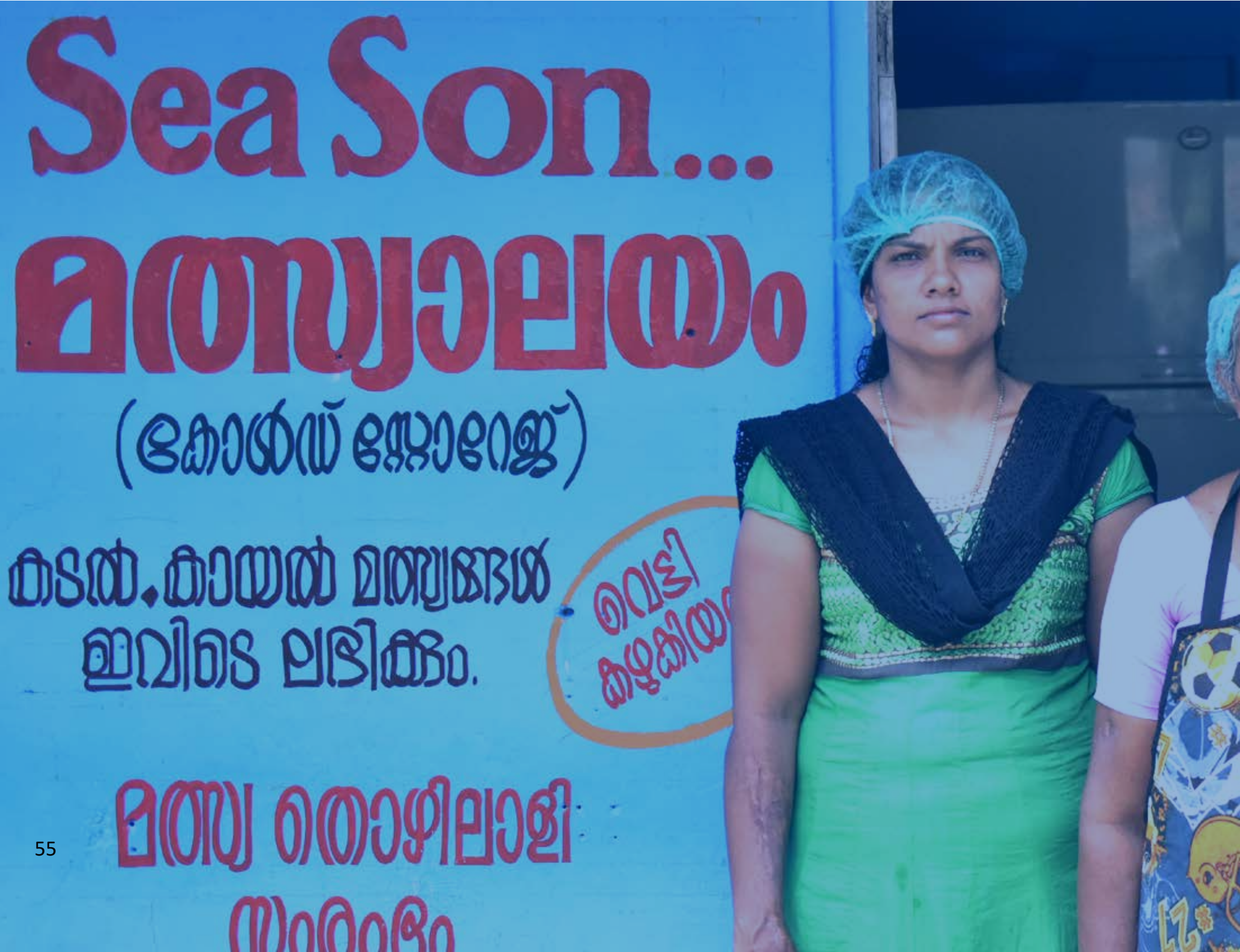
The Break-Even Point (BEP) = 87438 Kg of fish sold @Rs.100/kg

Pay Back Period = 1.87 years

Price per unit (P) = Rs 100

Cost per unit (C) = Rs 98.1

P-C = 1.9


Sea Son...
മത്സ്യാലയം
(കോൾഡ് സ്റ്റോറേജ്)
കടൽ.കായൽ മത്സ്യങ്ങൾ
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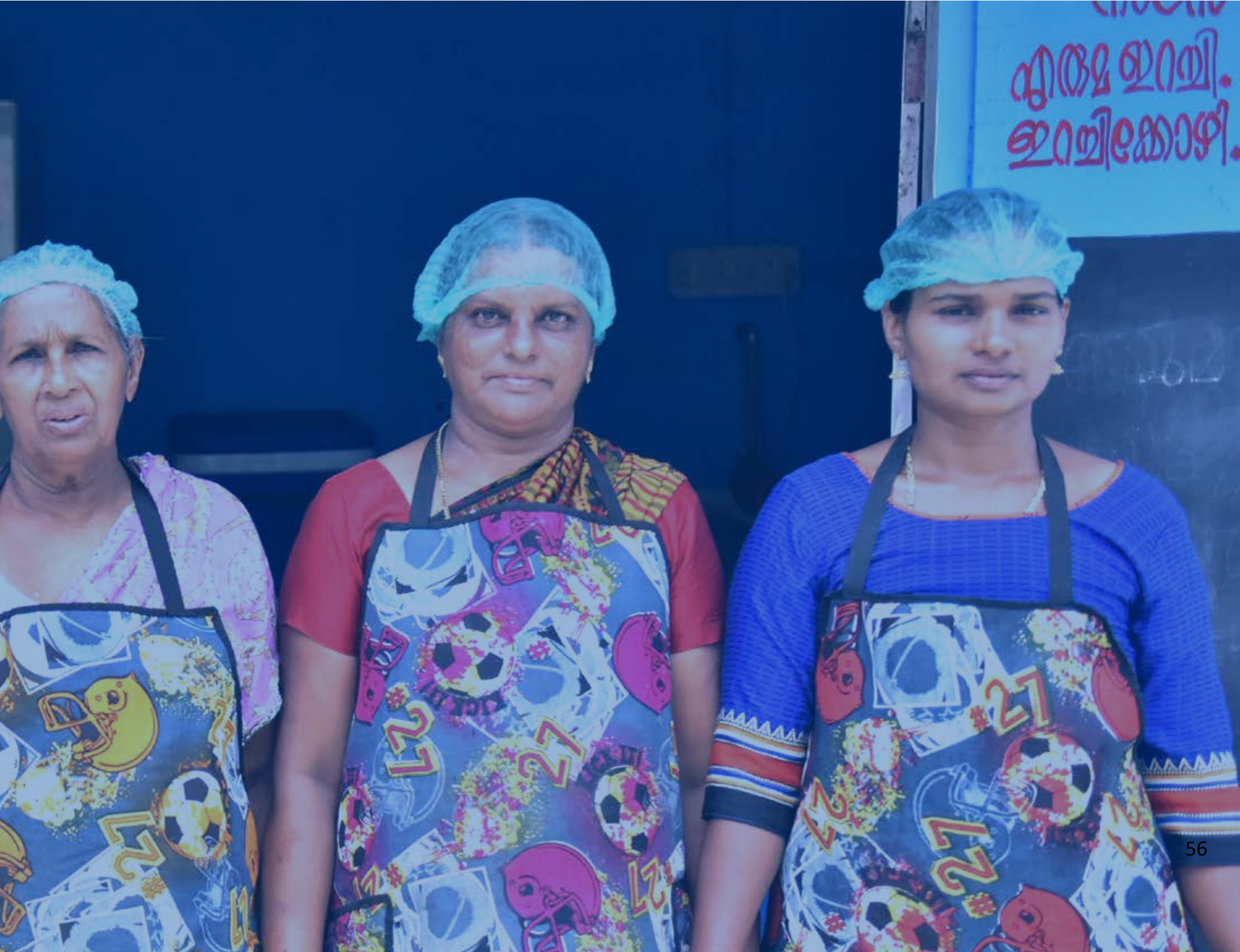
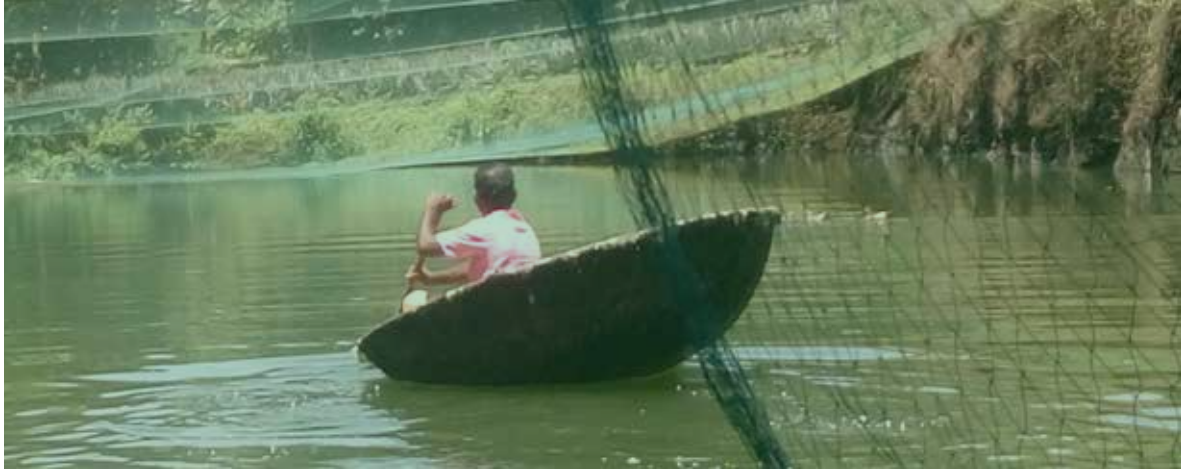
മത്സ്യ തൊഴിലാളി



Quarry Fish Farming SHGs

11



Quarry Fish Farming SHGs

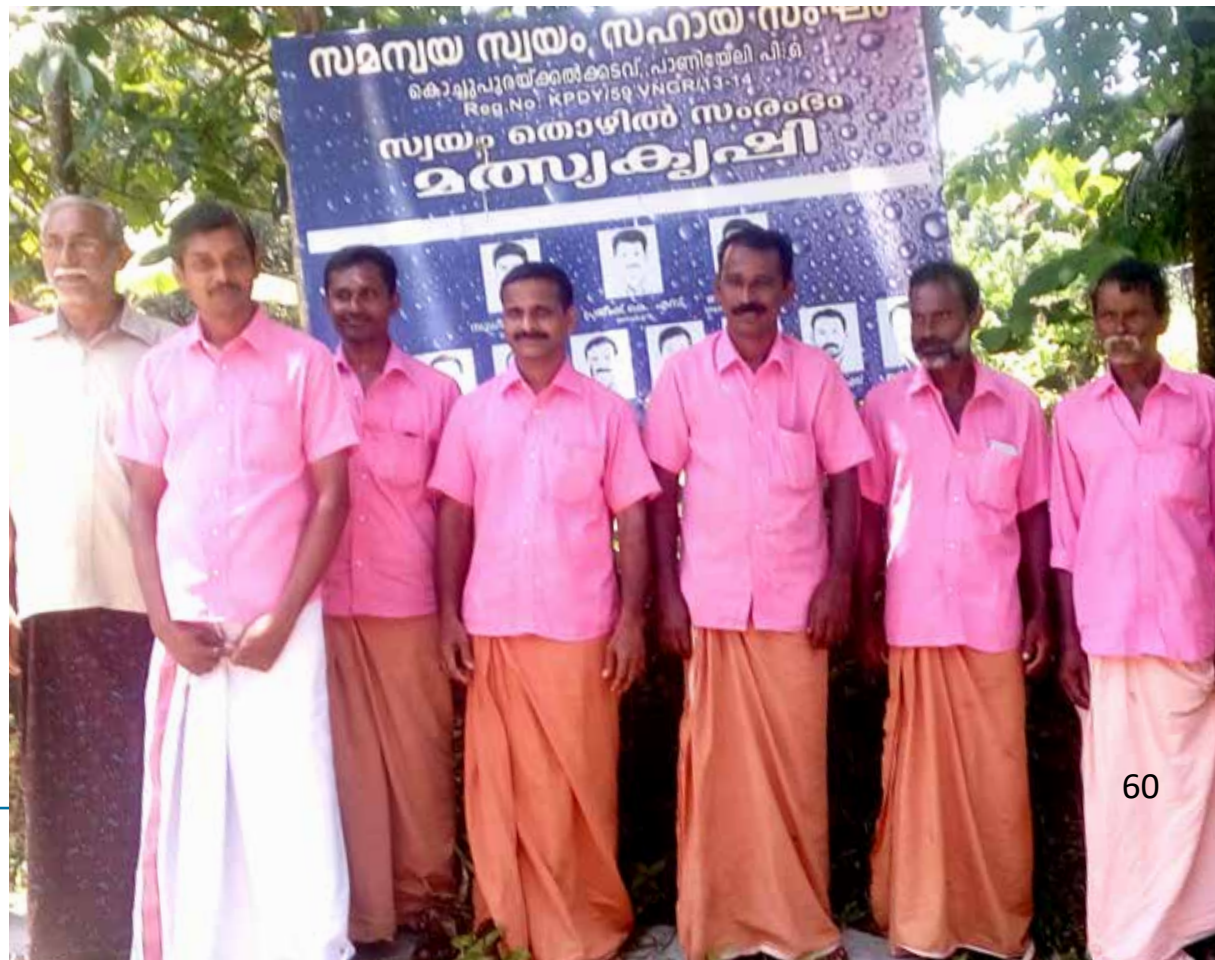
The quarries are the large reservoirs of fresh water. Paniyeli is a small village which made its significant place in Ernakulam tourism map in Perumbavoor. The presence of the famous water fall "Paniyelil Poru" makes this place as the favorite destination of tourists. A group of youngsters who had a strong determination to uplift their livelihood got mobilized into an SHG named as Samanwaya. With meticulous co-operation and hard work, this group successfully undertook the farming of fish in the quarry. They first cleaned these quarries which is about 10 cents areas. Then they introduced the fish seeds into these quarries. The regular feeding and maintenance led to success. Even though all the members in this SHG have other jobs, they find time for fish farming.

For the first time as an experiment they have selected "African cat fish" for farming as the candidate species in the quarry. When they got support from their families, the fish feeding and maintenance became an easy task. Finding markets for fishes which weigh more than 1 kg within 8 months was a big challenge in front of them. The step by step harvesting was not possible in this case. So, the harvested fishes have to be marketed on the same day. When we compare the investment, hard work and profit, it was seen that, it is a promising income generating venture. When they succeed in their first venture, they have decided to expand it to vast areas in the further steps. Similarly the women SHG leader farmer Ms. Raji George in Karukutty also has successfully done fish farming in quarry and she was honored by CMFRI as the best woman farmer in the international women's day.

Table: Economic analysis of Quarry pond fish farming of Gift Tilapia (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Cage cost (4m X 4m X 2.5 m) HDPE net with GI Frame cage	1	50000	50000						
Aeration	1	10000	10000						
Total fixed cost			60000						
Variable Expenditure									
Gift Tilapia seed (number)	2000	8	16000	2000	8	16000	2000	8	16000
Feed (kg)	1216	40	48640	1216	40	48640	1216	40	48640
Total Variable Cost			64640			64640			64640
Interest on 75% of the capital investment @12% per annum			5400			5400			5400
Depreciation on capital investment, @20%			12000			12000			12000
Insurance premium @ 2% of the capital investment			1200			1200			1200
Administrative/Other expenses @ 1% of 75% capital investment			450			450			450
Total Annual Operating Cost (Rs.)			83690			83690			83690
Returns									
Gross Return (Income from GIFT production 760Kg @ Rs.250/-)	760	250	190000	760	250	190000	760	250	190000
Net **Returns**			106310			106310			106310
BC ratio			2.27						

Average Annual Net Return	= R106310
The total Fixed Cost	= Rs 60000
The Break-Even Point (BEP)	= 364 kg of GIFT Tilapia @ Rs.250/kg
Pay Back Period	= 0.56 years
Price per product	= Rs 250
Cost per unit	= Rs 85.1
P-C	= 164.9



Fish Amino SHGs

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Fish Amino SHGs

Elankunnapuzha is one of the major Gramapanchayaths in Vypin. The *Krishi Bhavan* of the State department of Agriculture of Elankunnapuzha has come forward with a new livelihood option by uniting around 26 fisher womenfolk. These women were led to the making of fish amino, which is a bio fertilizer as well as a biopesticide. It can be produced in a reasonable amount using the locally available raw materials. As the first step, 2 groups named Jaiva Haritha Karshaka Sangham (JHKS) with 14 members and Karshakasree Vanitha Karshika Sangham (KVKS) with 12 members have been formed. In this venture, CMFRI in Kochi studied the equity and the equality of these groups and conducted the SHG interaction meetings and fisherfolk training programmes. Fish amino acid is an effective organic liquid fertilizer which is made from mixing the raw materials like sardine, which is an early and plenty available fish which contains high amount of amino acid and jaggery. Chopped sardine and crushed jaggery are mixed in a ratio of 1:1 proportion. Store the mixture in an air tight plastic jar / bottle for 21 days. Keep the jar in dry place and away from direct sun light. After 15 days, shake the bottle without opening the bottle. After 21 days filter the mixture and remove the residuals. Obtained solution can be used as a bio fertilizer and bio pesticide by adding 40 times of water.

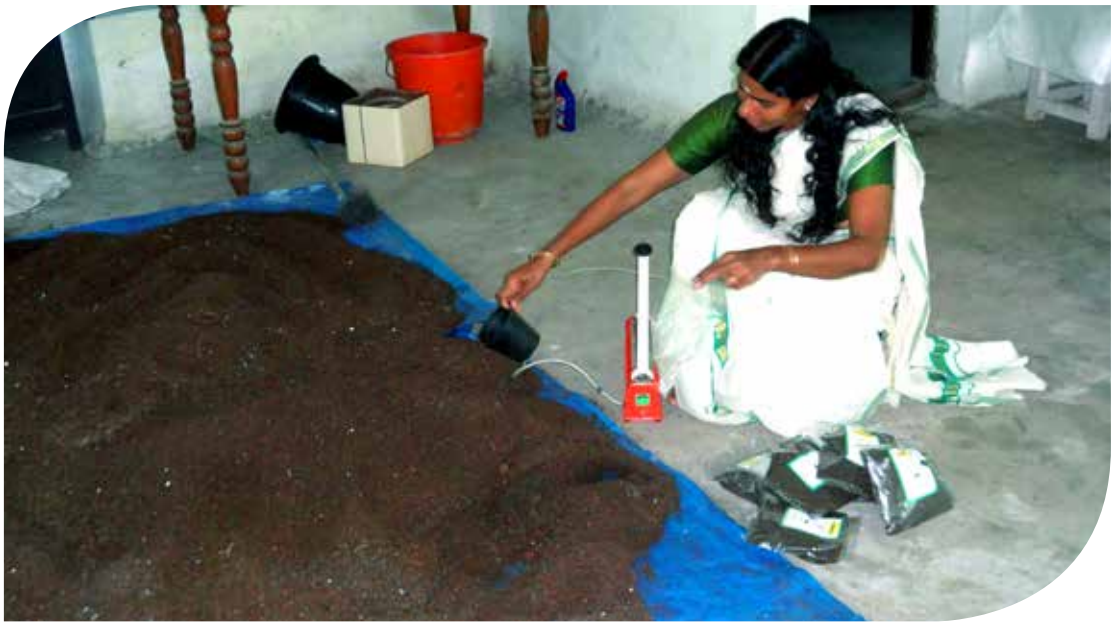
Table: Economic analysis of Fish Amino SHG units (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Large plastic bucket	2	450	900						
Muslin cloth (in meters)	3	45	135						
Plastic trays	2	125	250						
Knife	5	50	250						
Scissors	3	100	300						
Furniture			2500						
Total fixed cost			4335						
Variable Expenditure									
Raw Fish (Quantity in Kg)	100	54	5400	100	41.4	4140	100	35.6	3560
Jaggery (Quantity in Kg)	100	47.8	4780	100	43.2	4320	100	39	3900
Plastic bottles (200 ml) (in numbers)	450	4	1800	450	3.5	1575	425	3.5	1488
Plastic bottles (100 ml) (in numbers)	660	2.5	1650	600	2.5	1500	600	2.5	1500
Labelling (Sheets)			1050			1050			1040
Labour (Rs.750 for 15 Man days)			11250			11250			11250
Transportation			500			500			500
Miscellaneous			200			150			150
Total Variable Cost			26630			24485			23388
Interest on fixed cost (10% /annum)			434			434			434
Depreciation (10% /annum)			434			434			434
Total Annual Operating Cost (Rs.)			27498			25353			24256
Returns									
Fish Amino 200 ml (50/bottle)	450	50	22500	448	50	22400	423	50	21150
Fish Amino 100 ml (25/bottle)	560	25	14000	572	25	14300	585	25	14625
Gross Return			36500			36700			35775
Net Returns			9002			11347			11519

The Average Operating cost	= Rs.25, 702/-
Average Annual Net Return	= Rs.10, 622/-.
The total Fixed Cost	= Rs 4,335/-.
The Break-Even Point (BEP)	= 548 (100 ml bottles) of processed fish amino acid.@ of Rs.25/bottle
Pay Back Period	= 0.48 years
Price per product (P)	= Rs 25
Cost per unit (C)	= Rs 17.1
P-C	= 7.9

Fish Fertilizer SHGs

13



Fish Fertilizer SHGs

Engandiyoor is one of the coastal villages in Vadanappally panchayat of Thrissur district. A group of women made a successful step in the production of biofertilisers from fish. It is seen as a possible solution to the issue of disposing large quantities of fish waste generated by the fishing industries and processing units. As first step, group members collect small fishes of low economic value from harbors, sardines, fish wastes etc. from markets. Then thoroughly mix fish waste with jaggery in a ratio of 3:1 and keep the mixture in air tight containers for a period of average 50 days (Varies with the species and size of fishes). The obtained slurry is mixed with coir pith in a ratio of 3:1 and after sun drying, the fish fertilizer is packed (branded as 'Fertifish') in polythene bag possessing brand name and other details of the product. The women SHGs 'Prakrithishree' of Munambam of Ernakulam sdistrict and 'Jaivashree' of Engandiyoor of Thrissur district mobilized by Society for Assistance to Fisherwomen (SAF) were taken into consideration for computing the indicative economics.

Table: Economic analysis of Fish Fertilizer SHG units (Cost/Price in Rs)

Particulars	First year			Second year			Third year			Fourth year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure												
FRP Cans	10.00	5200.00	52000.00									
Plastic Sheet	5.00	1250.00	6250.00									
Sieve	1	750.00	750.00									
FRP Tank	3.00	45000.00	135000.00									
Weigh Balance	1.00	6000.00	6000.00									
Sealing Machine	1.00	3000.00	3000.00									
Trays	3.00	150.00	450.00									
Miscellaneous			500									
Total Fixed Cost (Rs.)			203450.00									
Variable Expenditure												
Raw Fish (Kg)	1000.00	18.00	18000.00	1000.00	17.20	17200.00	1000.00	17.40	17400.00	1000.00	19.30	19300.00
Fish Waste (Kg)	1000.00	2.00	2000.00	1000.00	2.00	2000.00	1000.00	2.00	2000.00	1000.00	2.00	2000.00
Coir Pith (Kg)	600.00	20.00	12000.00	600.00	16.67	10002.00	600.00	16.67	10002.00	600.00	16.67	10002.00
Jaggery (Kg)	2000.00	25.00	50000.00	2000.00	20.00	40000.00	2000.00	20.00	40000.00	2000.00	20.00	40000.00
Rent (per month)	10.00	1500.00	15000.00	10.00	1500.00	15000.00	10.00	1500.00	15000.00	10.00	1500.00	15000.00
Labelling (Sheets)	160.00	30.00	4800.00	160.00	30.00	4800.00	150.00	30.00	4500.00	125.00	30.00	3750.00
Labour Charge			60000.00			60000.00			60000.00			60000.00
Transportation			20000.00			21000.00			18900.00			19000.00
Miscellaneous			2000.00			1850.00			2100.00			2500.00

Total Variable Cost (Rs.)			183800.00			171850.00			169902.00			171552.00
Interest on fixed cost (10%/an-num)			20395.00			20395.00			20395.00			20395.00
Depreciation (10% /annum)			20395.00			20395.00			20395.00			20395.00
Total Operating cost			224590.00			212640.00			210692.00			212342.00
Returns												
Fertifish (250 gm)	2000.00	90.00	180000.00	1900.00	90.00	171000.00	1950.00	90.00	175500.00	2060.00	90.00	185400.00
Fertifish (5 kg)	60.00	1800.00	108000.00	52.00	1800.00	93600.00	44.00	1800.00	79200.00	55.00	1800.00	99000.00
Gross Return			288000.00			264600.00			254700.00			284400.00
Net Returns			63410.00			51960.00			44008.00			72058.00

The Average Operating cost = Rs 215066

Average Annual Net Return = Rs 57859

The total Fixed Cost = Rs 203450

The Break-Even Point (BEP) = 313 (5 kg packets) @ Rs. 1800 each Or 1565 kg @ Rs. 360/kg

Pay Back Period = 3.61 years

Price per main product(5kg pack) = Rs 1800

Cost per unit = Rs 1149.4

P-C = Rs 651

Ornamental Fish SHGs

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Ornamental Fish SHGs

Ornamental fish culture units established by the mobilized SHGs of women fisherfolk by Society for Assistants to Fisher women (SAF) as well as private groups in Iringal Craft village in Vatakara of Kozhikkode district, Keezhillam location of Ernakulam district and Vykom areas of Kottayam district were taken into consideration for the study. The brief essence of the indicative economics of the fresh water ornamental fish unit is projected here.

Table: Economic analysis Ornamental Fish Culture Unit (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Breeding section									
Shed with roof and walls (125 sq. M)	125	450	56250						
Cement tanks with1000L capacity	5	3200	16000						
Aquarium tanks with 150 L capacity	25	2750	68750						
Rearing units									
Cement tanks with 5000 L capacity	8	12000	96000						
Aquarium tanks with 150 L capacity	25	2750	68750						
Electrification and its components	1	6000	6000						
Water supply and plumbing	1	15000	15000						
Hand nets	5	570	2850						
Filtration units for Aquarium tanks	50	1250	62500						
Air blower /Air Pump	50	465	23250						
Generator	1	28200	28200						
Water pump/ Motor	1	16000	16000						
Heater	10	3000	30000						
Bore well/ tube well	1	50000	50000						
Lab instruments	1	5000	5000						
Glass wares	1	3000	3000						
Furniture	1	3500	3500						
Total fixed cost			551050						
Variable Expenditure									
Brooder stock (1 lot per Year)	1	7000	7000	1	8000	8000	1	8000	8000
Fish feed (kg)	550	40	22000	550	75	41250	550	75	41250
Medicines and pest management	1	1000	1000	1	2000	2000	1	2000	2000
Electricity charges (per year)			180000			180000			180000
Fuel charges (per year)			7000			7000			7000
Labour charges (man days)	2400	200	480000	2400	200	480000	2400	200	480000

Transportation (per year)			200000			200000			200000
Packing (per year)			150000			150000			150000
Miscellaneous (per year)			12000			12000			12000
Total Variable cost			1059000			1080250			1080250
Interest on fixed cost (10% /annum)			55105			55105			55105
Depreciation (10% /annum)			55105			55105			55105
Total Annual Operating Cost (Rs.)			1169210			1190460			1190460
Gross Return (Selling of fries)	62500	12	750000	125000	12	1500000	125000	12	1500000
Net Returns			-419210			309540			309540

Note: For working out of the economics of the ornamental fishery unit, a unit size of 125 m2 owned plot with 45 m3 water holding capacity tanks were taken in to consideration. We considered the guppy fish and gold fish for the ornamental fish culture unit with summer monsoon and winter spawning seasons. on an average it is assumed that 1.25 lakhs of fries will be produced in entire unit and only 50 per cent of which will be reaching to the final stage before marketing in first year. on an average 12 rupee is getting for a pair while marketing.)

Average Annual Net Return = Rs 66623.33

The total Fixed Cost = Rs 551050

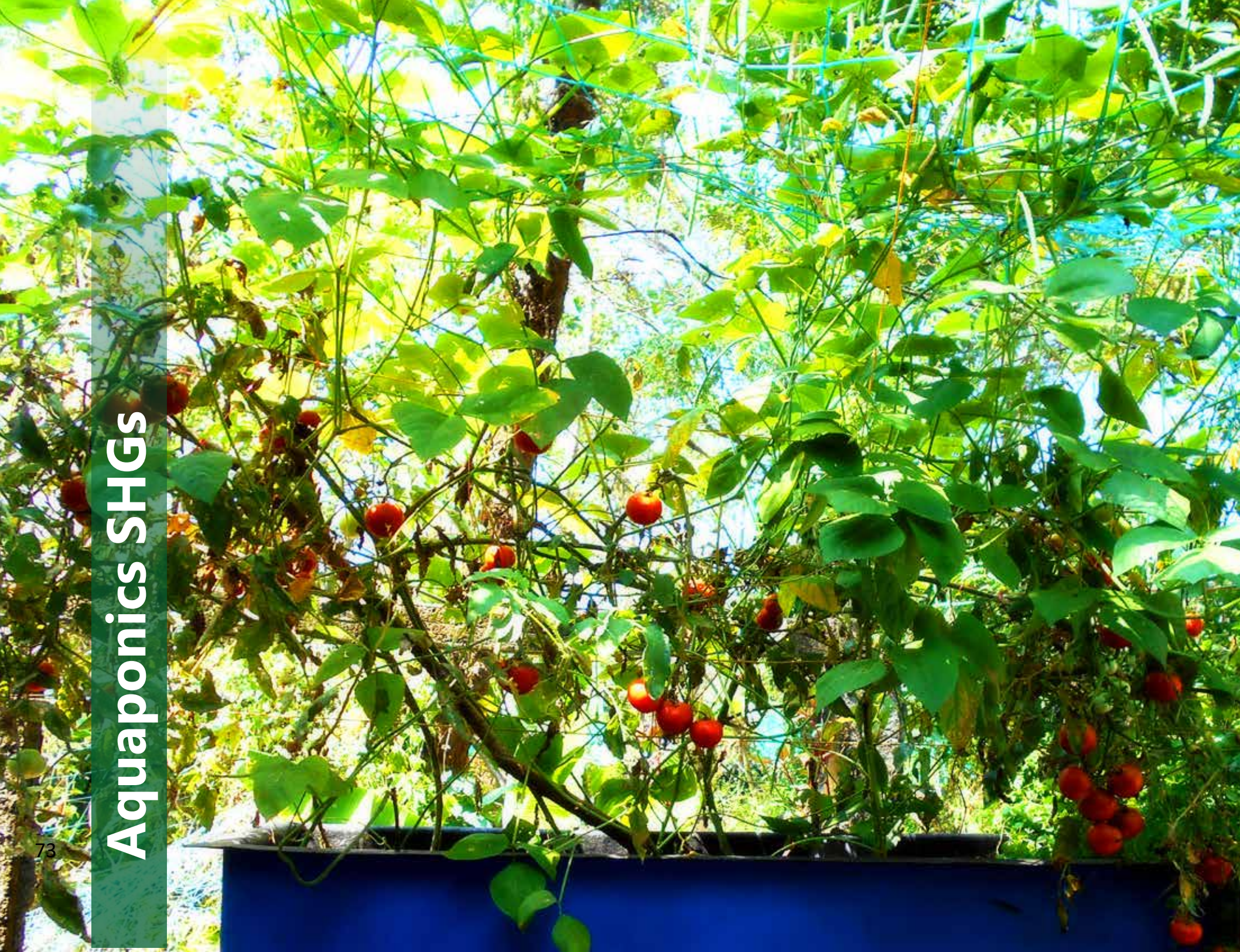
The Break-Even Point (BEP) = 324605 fries at an average rate of Rs.12/unit

Pay Back Period = 4.13 years

Price per product (P) = Rs 12

Cost per unit (C) = Rs 10.3

P-C = 1.7



Aquaponics SHGs

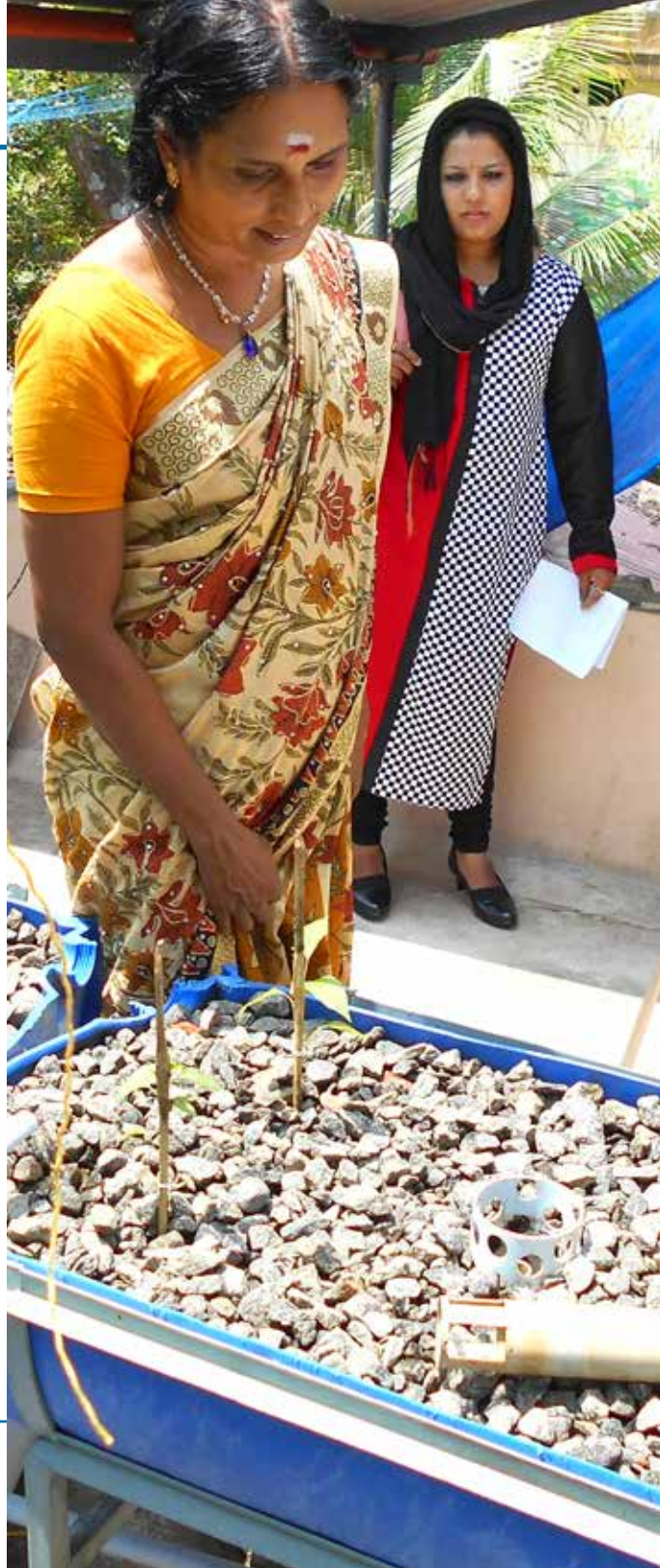
15

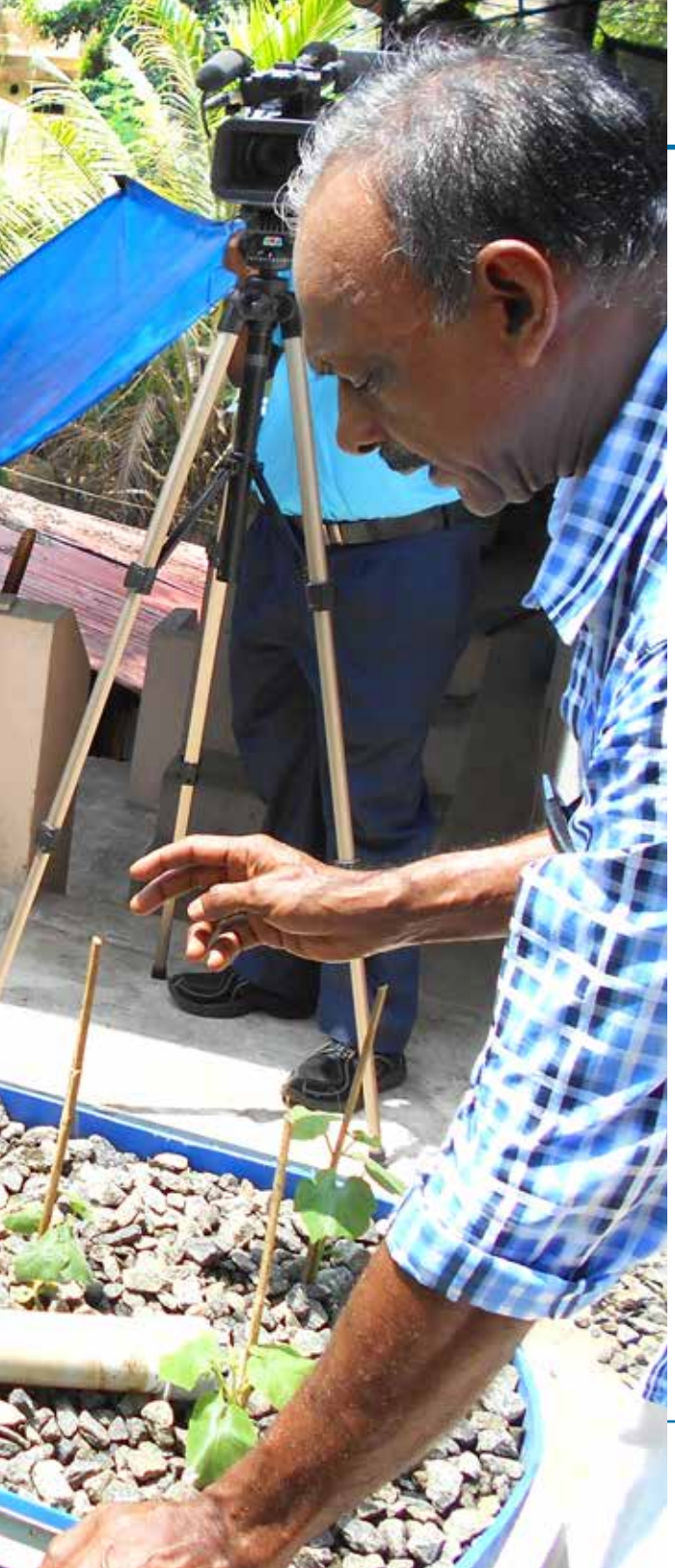
Aquaponics SHGs

In Ernakuklam district, Cherai panchayath has been declared as aquaponics village because of the intervention of Marine Products Export development Authority (MPEDA). Through an amount of Rs 15,000/- as interest free loan, issued from Service Co-operative Bank, 70 aquaponics units were initiated by 70 families and they are in constant monitoring of the progress and are interconnected through social media platform to solve the problems if encountered in hydroponics sector. A judicious blend of fresh fish as well as vegetables is meticulously accomplished and a live fish marketing unit also was set up for selling the fish in a common platform. An estimate of indicative economics taken is presented here.

Table: Economic analysis of Aquaponics Unit (Cost/Price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Recirculation Aquaculture System (RAS) of fish culture system									
Fish tank	1	28000	28000						
Water pump/ Motor	1	4000	4000						
Air pump	1	2500	2500						
Electrification and its components	1	2000	2000						
Planting bed									
Media bed support: plastic block/ fibre blocks	8	1500	12000						
Gravels to fill the planting pots	8	3000	24000						
Water supply and plumbing	1	8000	8000						
Hand nets	1	570	570						
Shading material	1	3500	3500						
Total fixed cost			84570						
Variable Expenditure									
Plant seedlings (20 plants per bed for three months)	320	4	2560	320	4	2560	320	4	2560
Fish feed (kg/month) 8*.115kg*30	3312	40	13248	3312	40	13248	3312	40	13248
Fingerling (1000) for six months	2000	1.5	3000	2000	1.5	3000	2000	1.5	3000
Electricity charges (10 units per month)	120	20	2400	120	20	2400	120	20	2400
Miscellaneous (per month)	12	1000	12000	12	1000	12000	12	1000	12000
Total Variable cost			33208			33208			33208
Interest on fixed cost (10% /annum)			8457			8457			8457
Depreciation (10% /annum)			8457			8457			8457





Total Annual Operating Cost (Rs.)			50122			50122			50122
Returns									
Tomato (20 kg/season with at least 4 harvest cycles/annum)	80	20	1600	80	20	1600	80	20	1600
Amaranthus (6 kg/season with at least 4 harvest cycles/annum)	24	10	240	24	10	240	24	10	240
Fish tilapia (900 no 500 g each/ season)	1800	150	270000	1800	150	270000	1800	150	270000
Gross Return			271840			271840			271840
Net Returns			221718			221718			221718

Note: Here, We consider a unit of aquaponics for home consumption and not for commercial use. The basic items are a tank with 10000 litre capacity and 0.5 cents of area (218 sq. feet) for the vegetable cultivation. Here we take the combination of tomato and amaranthus in different growing beds. Almost 20 plants per each bed and for each bed almost 115 g of fish feed per each day)

Average Annual Net Return = Rs 221718

The total Fixed Cost = Rs 84570

The Break-Even Point (BEP) = 643 kg Tilapia at an average rate of Rs.150/unit

Pay Back Period = 0.38 years

Price per product (P) = Rs 150

Cost per unit (C) = Rs 18.4

P-C = 131.6

Fish Value Addition SHGs

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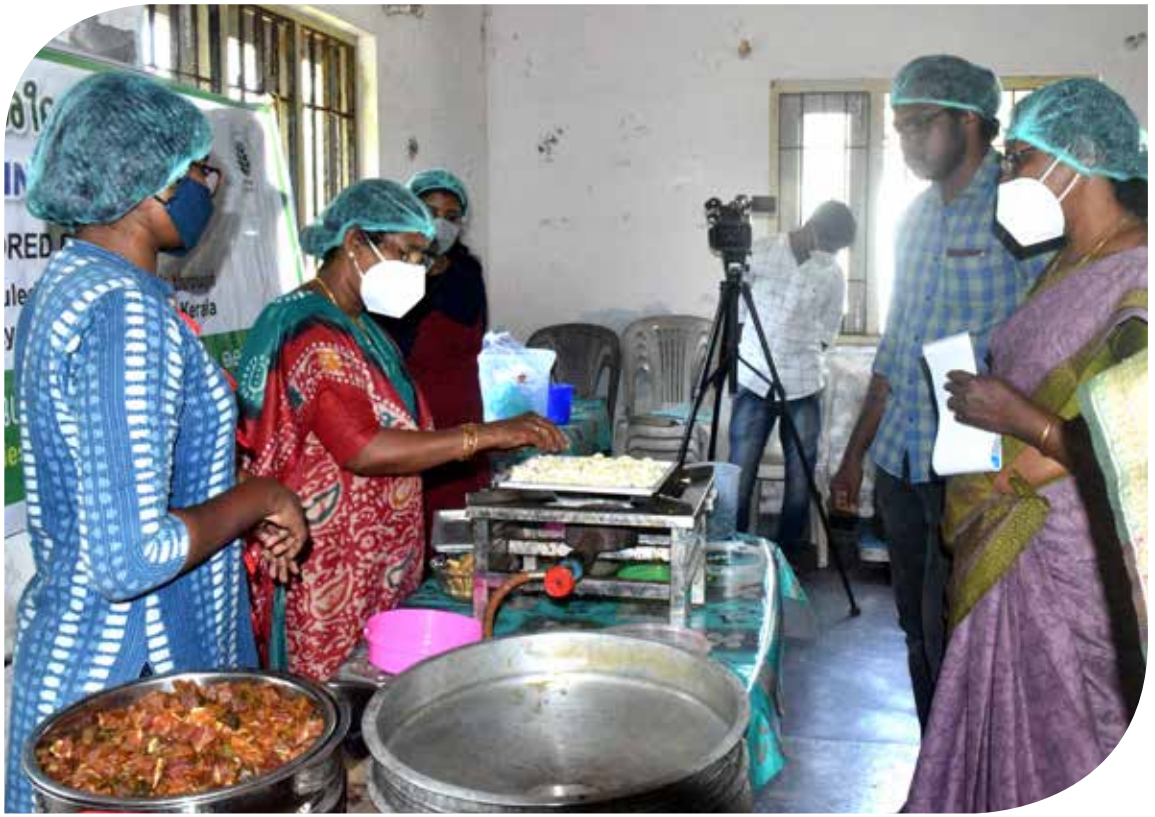
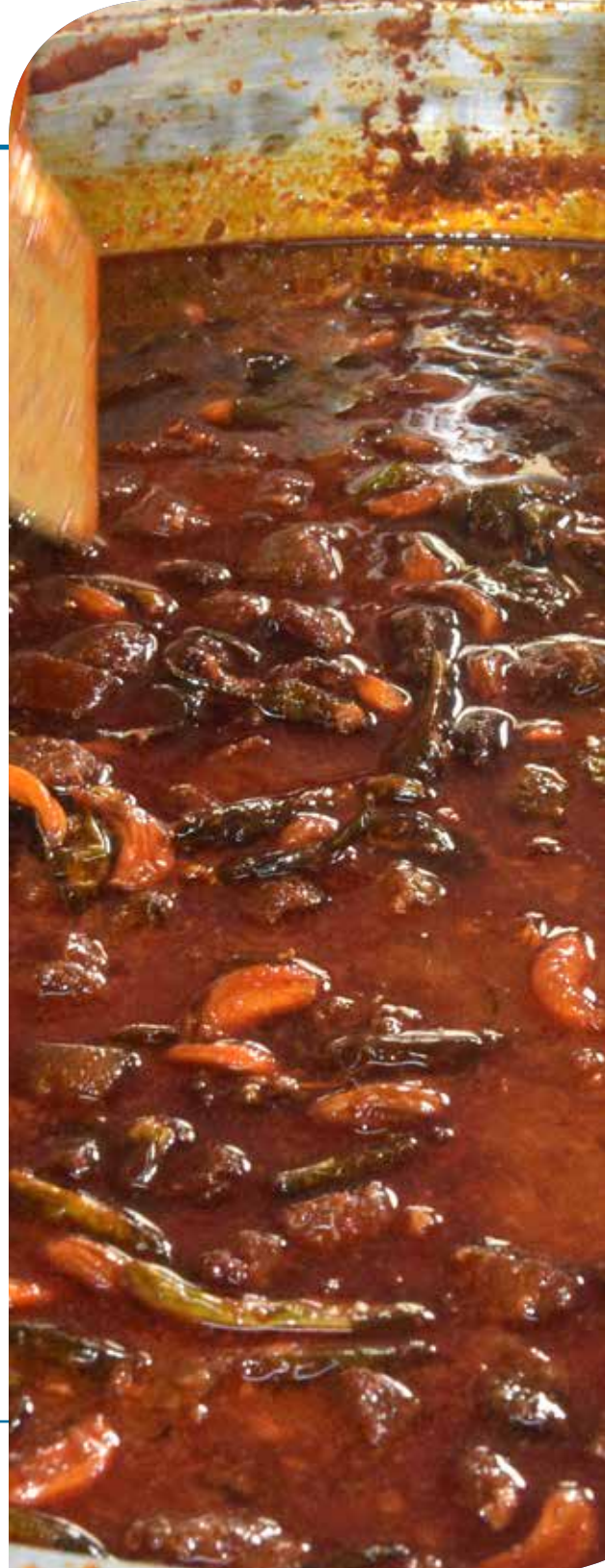


Fish value addition SHGs

Fish processing and value addition are very conspicuous among SHGs in fisheries sector and exemplary items like ready-to eat and ready to cook fish products are being brought to the market by the SHGs. The value added fish products like fish pickles, chutney powder, etc. brought out by the SHGs in Puthuvypu and Arakkunnam mobilised by CMFRI under the DST Project have been considered to estimate the indicative economics.

Table : Economic analysis of Fish pickling unit (Cost/price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Packing machine	1	20000	20000						
Commercial stove	1	10000	10000						
Big vessel	1	12000	12000						
Frying pan	1	2000	2000						
Containers	1000	15	15000						
Small stove	1	4000	4000						
Electronic weighing machine	1	8000	8000						
Mixer grinder	1	4000	4000						
Total Fixed Cost			75000						
Variable Expenditure									
Rent for building (Rs.5000/month)	12	5000	60000	12	5000	60000	12	5000	60000
Electricity charges/year			2400			2400			2400
Fish (Kg)	800	350	280000	800	350	280000	800	350	280000
Salt (kg)	50	24	1200	50	24	1200	50	24	1200
Masala powder (Kg)	60	466	27960	60	466	27960	60	466	27960
Green Chilly (Kg)	20	40	800	20	40	800	20	40	800
Garlic (Kg)	50	70	3500	50	70	3500	50	70	3500
Curry leaf (Kg)	2.5	40	100	2.5	40	100	2.5	40	100
Ginger (Kg)	50	38	1900	50	38	1900	50	38	1900
Gingelly Oil (Kg)	110	296	32560	110	296	32560	110	296	32560
Mustard Seeds (Kg)	15	50	750	15	50	750	15	50	750
Vinegar	100	80	8000	100	80	8000	100	80	8000
Sugar (Kg)	12.5	44.8	560	12.5	44.8	560	12.5	44.8	560
Labour charge (@ Rs. 600/Man days	50	600	30000	50	600	30000	50	600	30000
Packing charge	4000	2	8000	4000	2	8000	4000	2	8000
LPG	10	600	6000	10	600	6000	10	600	6000
Packing material			4000			4000			4000
Labelling	4000	3	12000	4000	3	12000	4000	3	12000



Total variable cost			479730			479730			479730
Interest on fixed cost (10%/annum)			7500			7500			7500
Depreciation (10%/annum)			7500			7500			7500
Total Operating Cost (Rs.)			494730			494730			494730
Gross return (Selling pickle @ Rs. 700/kg)	1000	700	700000	1000	700	700000	1000	700	700000
Net Returns (Rs.)			205270			205270			205270

Average Annual Net Return = Rs.205270

The total Fixed Cost = Rs.75000

The Break-Even Point (BEP) = 340 kg of fish pickle @ Rs. 700/kg

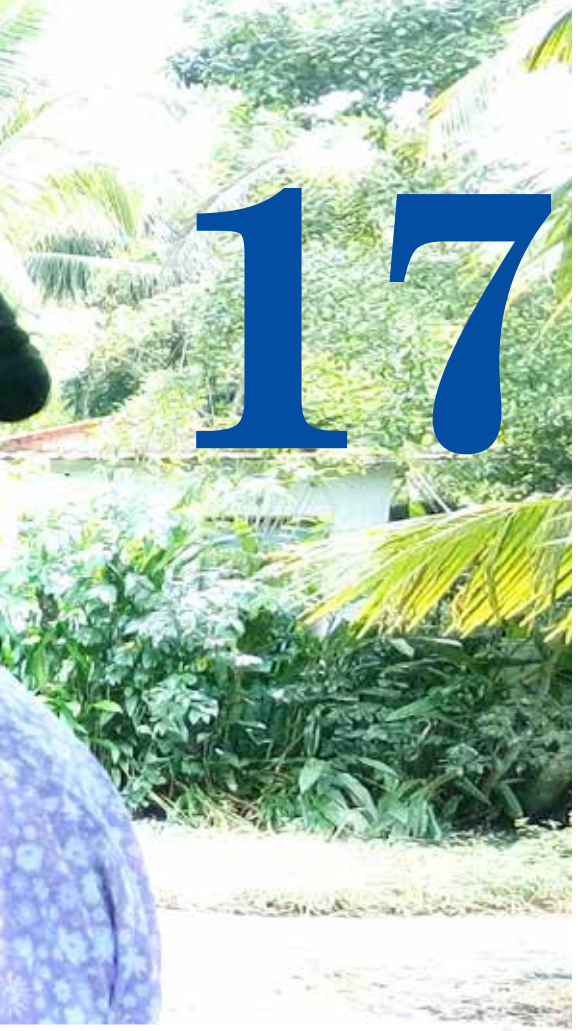
Pay Back Period = 0.37 years

Price per product (P) (Rs./Kg) = Rs.700

Cost per unit (C) = Rs.479.7

P-C = Rs.220.3

Prawn Peeling SHGs



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Prawn Peeling SHGs

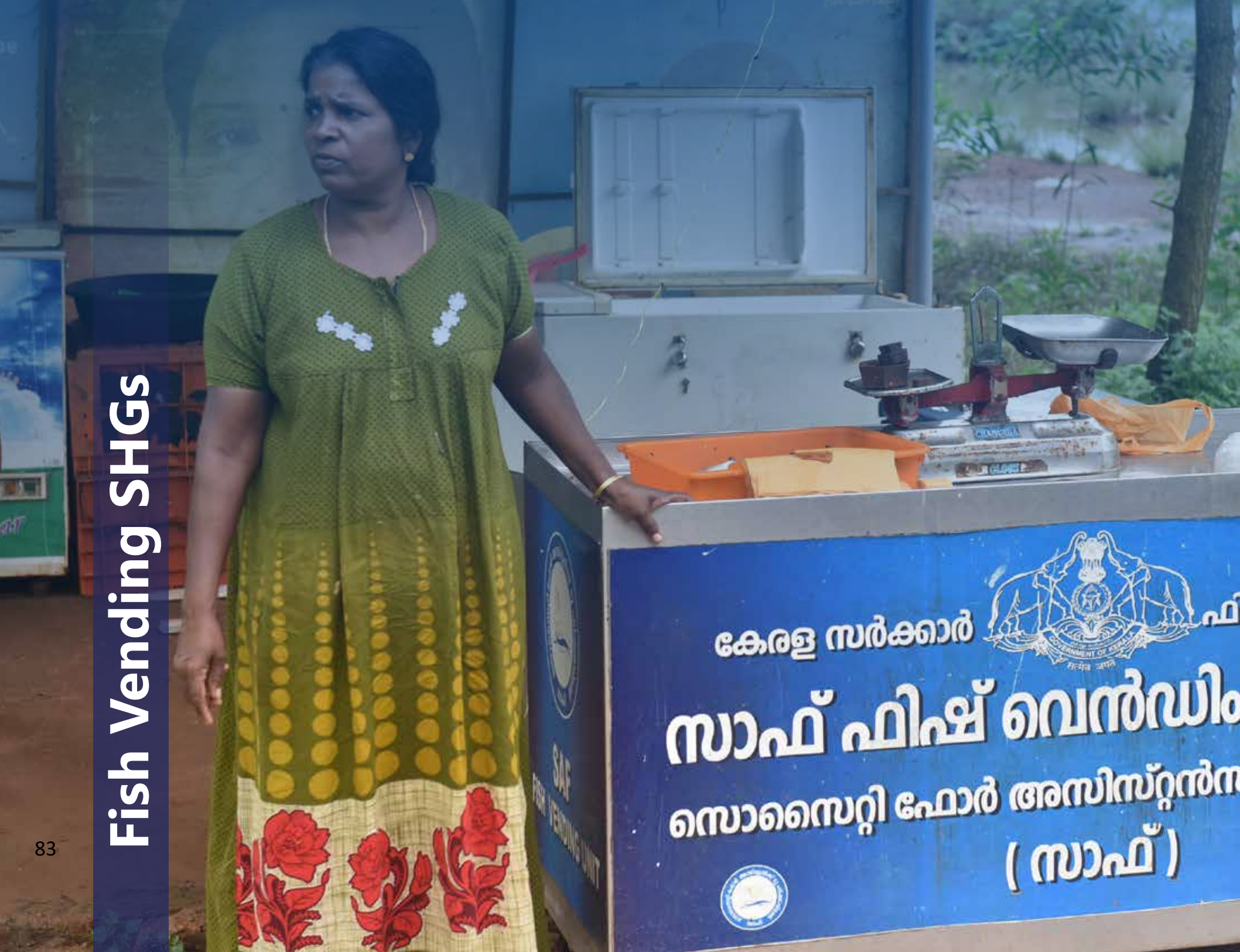
The prawn peeling units established for the women fisherfolk in Arthungal of Alappuzha district were considered for the indicative economics computation.

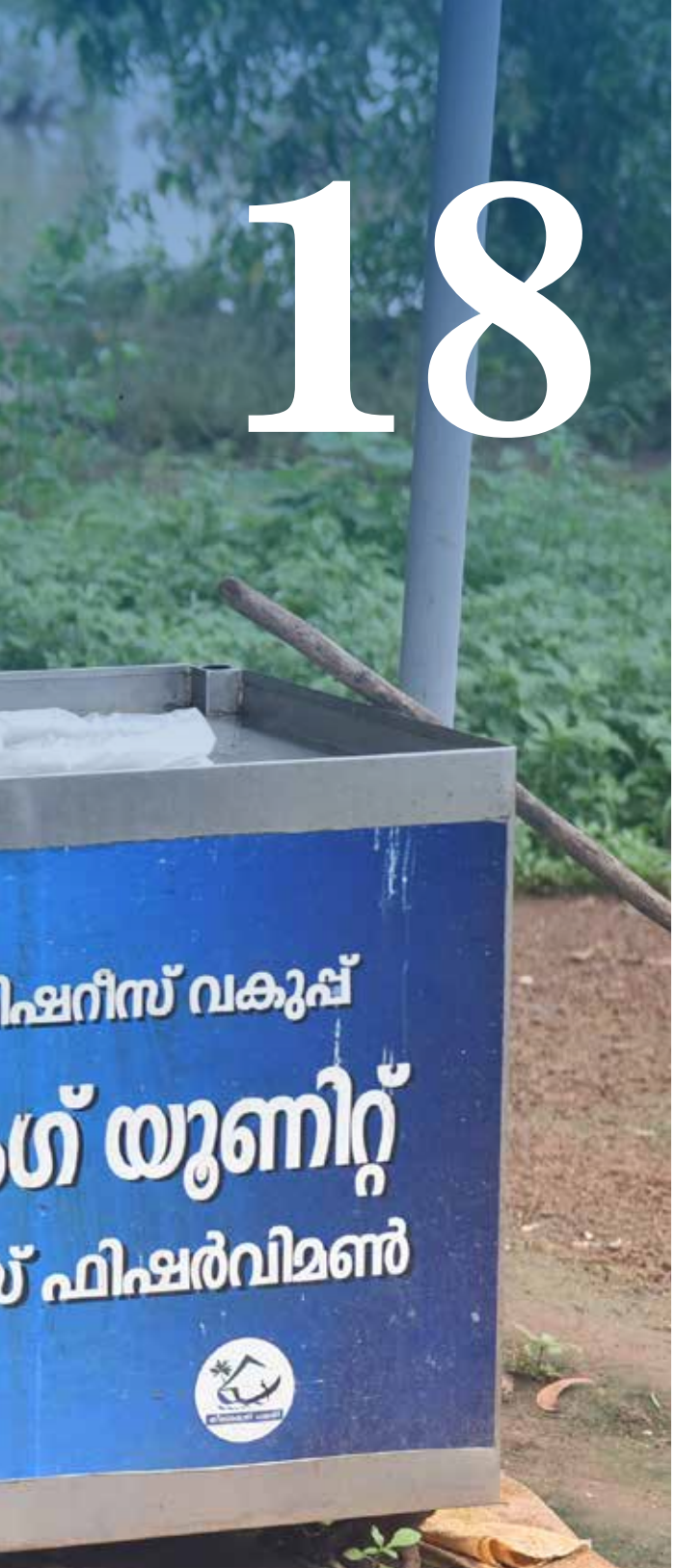
Table : Economic analysis of Prawn Peeling Units (Cost/price in Rs)

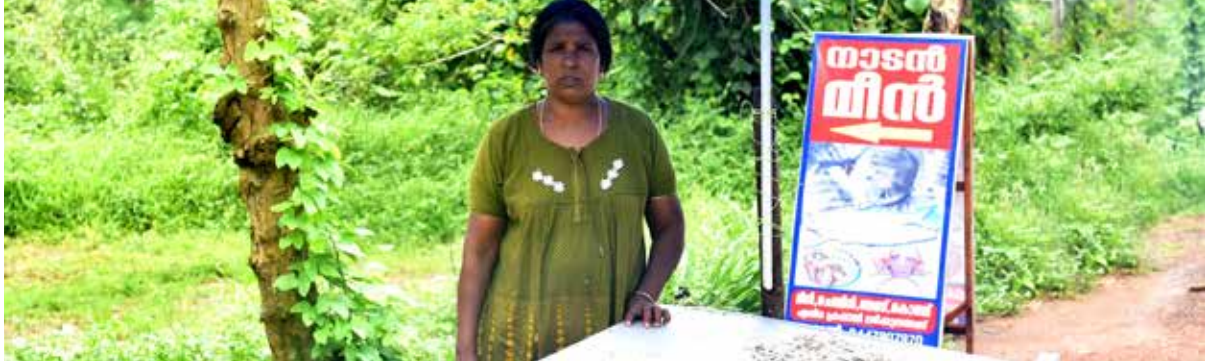
Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Total fixed cost			101500						
Total Variable Cost			927000			927000			927000
Interest on fixed cost @ 10 % per annum			10150			10150			10150
Depreciation @ 10 % per annum			10150			10150			10150
Total Annual Operating Cost (Rs.)			947300			947300			947300
Gross Return (3874 kg of prawn at an average price of Rs. 260/kg))	3874	260	1007240	3874	260	1007240	3874	260	1007240
Net Returns			59940			59940			59940
BC ratio			1.06						

Average Annual Net Return = Rs 59940
The total Fixed Cost = Rs 101500
The Break-Even Point (BEP) = 4900 kg of prawn at an average price of Rs. 260/kg
Pay Back Period = 1.69 years
Price per product (P) = Rs 260
Cost per unit (C) = Rs 239.3
P-C = 20.7

Fish Vending SHGs







Fish Vending SHGs

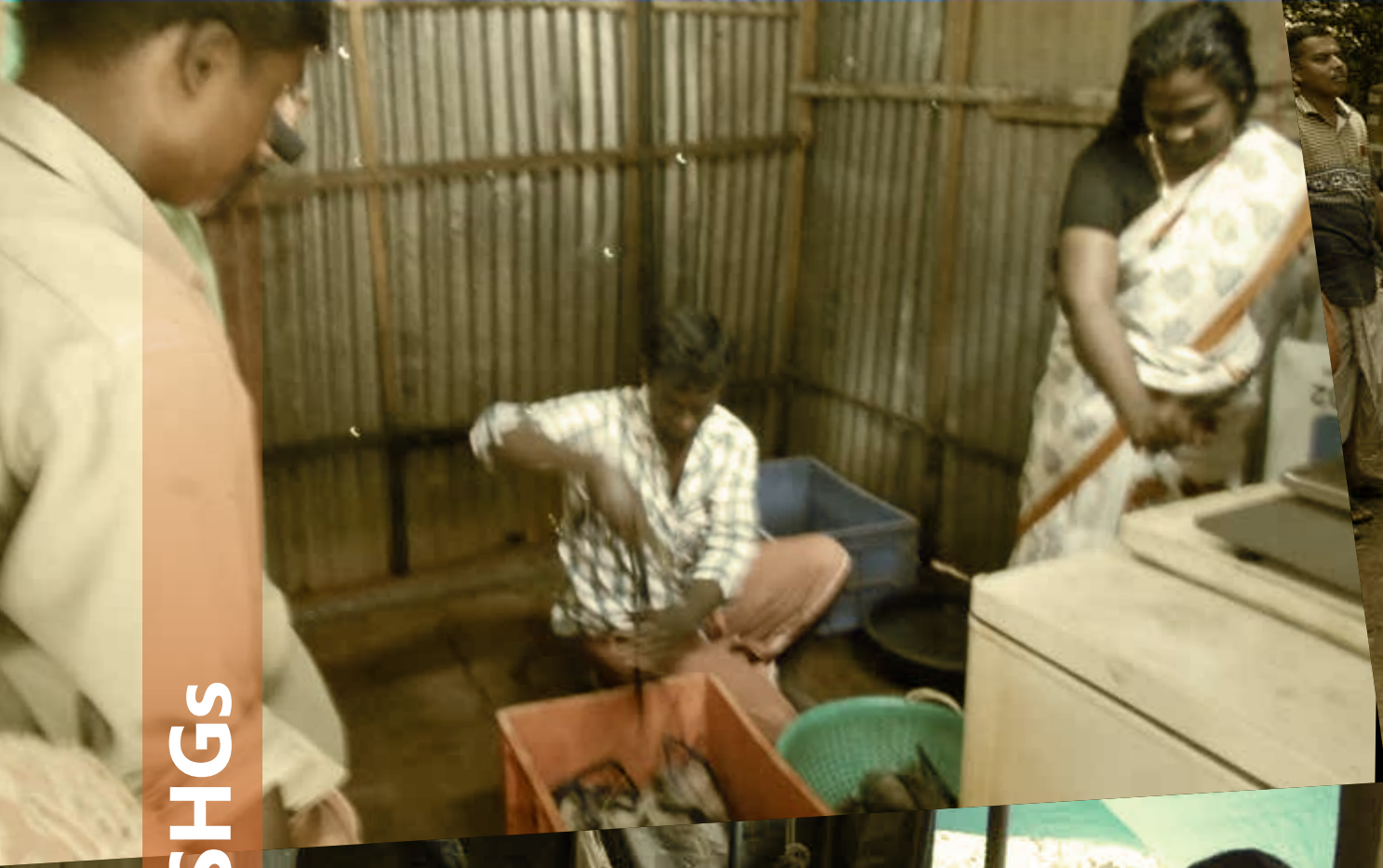
Based on the fish vending units established for women fisherfolk by the SAF in Poyya of Thrissur district and Arthungal of Alappuzha district, a brief essence of the indicative economics is projected here.

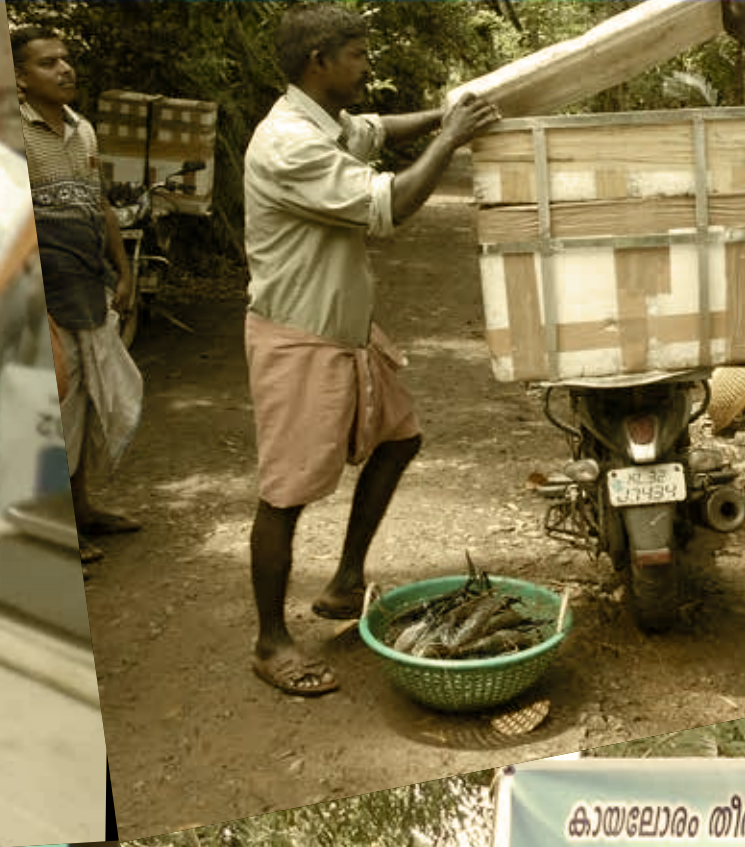
Table : Economic analysis of Fish Vending unit (Cost/price in Rs)

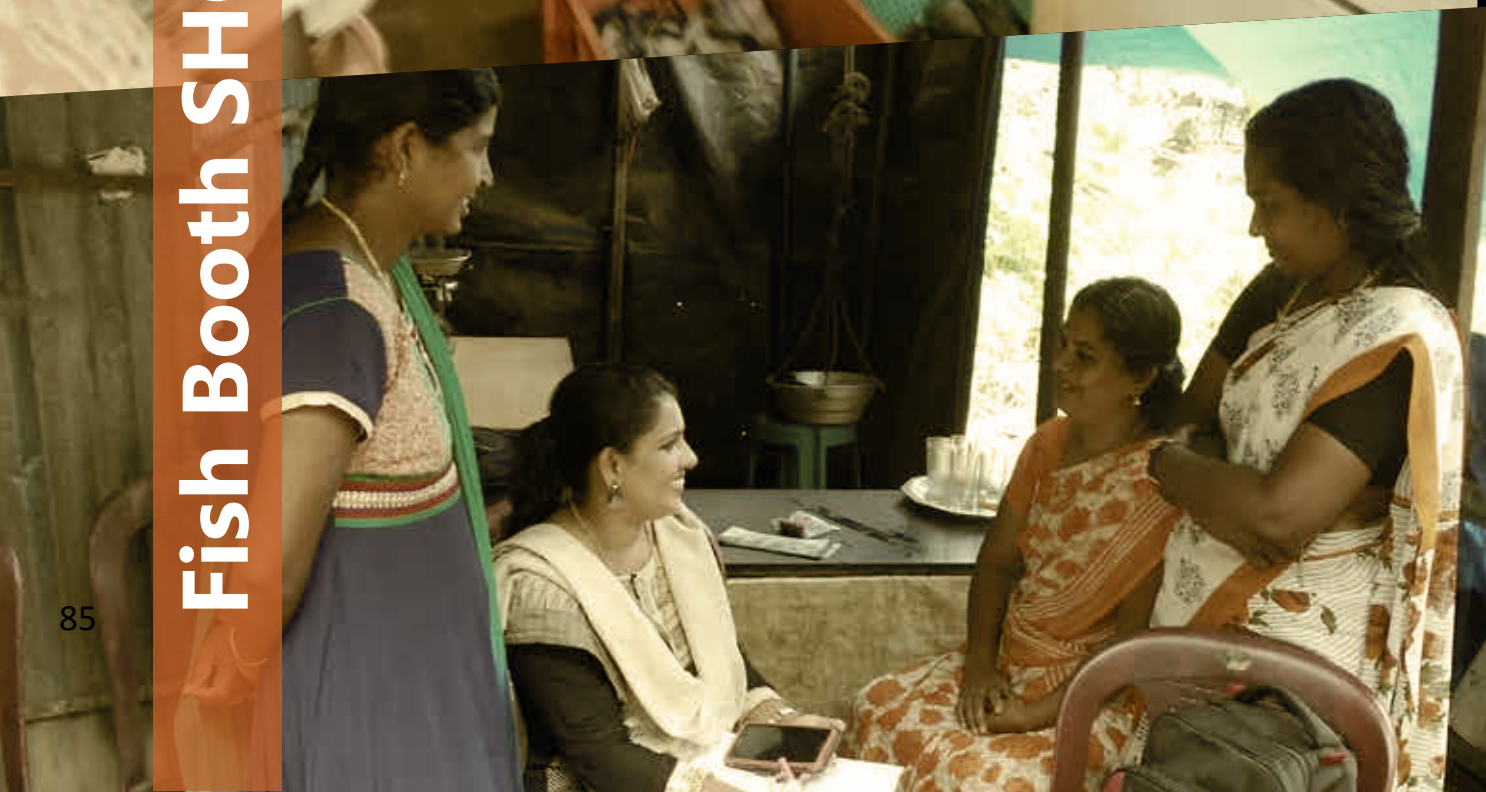
Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Total fixed cost			157000						
Total Variable Cost			1086000			1086000			1086000
Interest on fixed cost @ 10 % per annum			15700			15700			15700
Depreciation @ 10 % per annum			15700			15700			15700
Total Annual Operating Cost (Rs.)			1117400			1117400			1117400
Gross Return (5300 kg of fish at an average price of Rs. 226 /kg))	5300	226	1197500	5300	226	1197500	5300	226	1197500
Net Returns			80100			80100			80100
BC ratio			1.07						

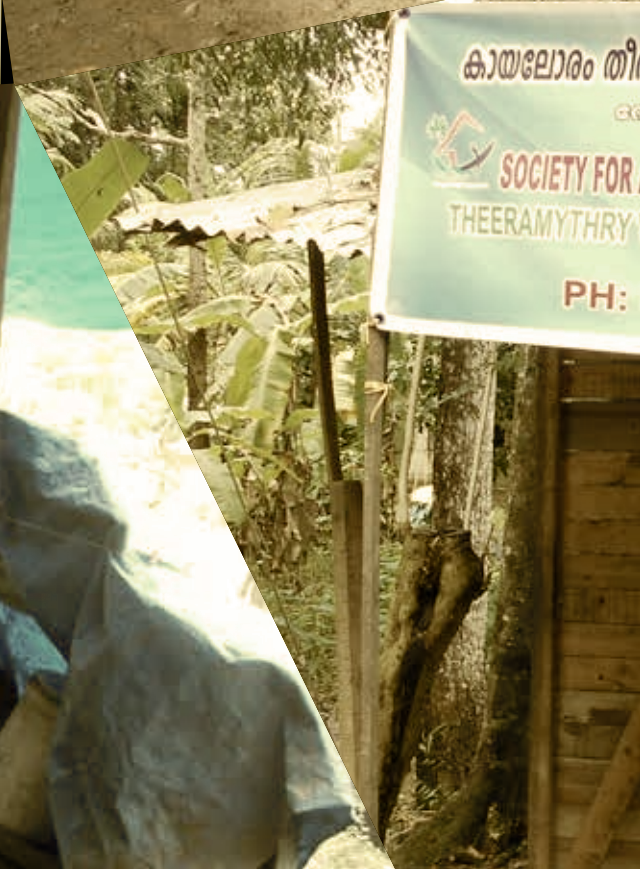
Average Annual Net Return	= Rs 80100	The total Fixed Cost	= Rs 157000
The Break-Even Point (BEP)	= 7463 kg of fish sold @ Rs. 226/kg		
Pay Back Period	= 1.96 years	Price per product (p)	= Rs 225.9434
Cost per unit (C)	= Rs 204.9	P-C	= 21.0

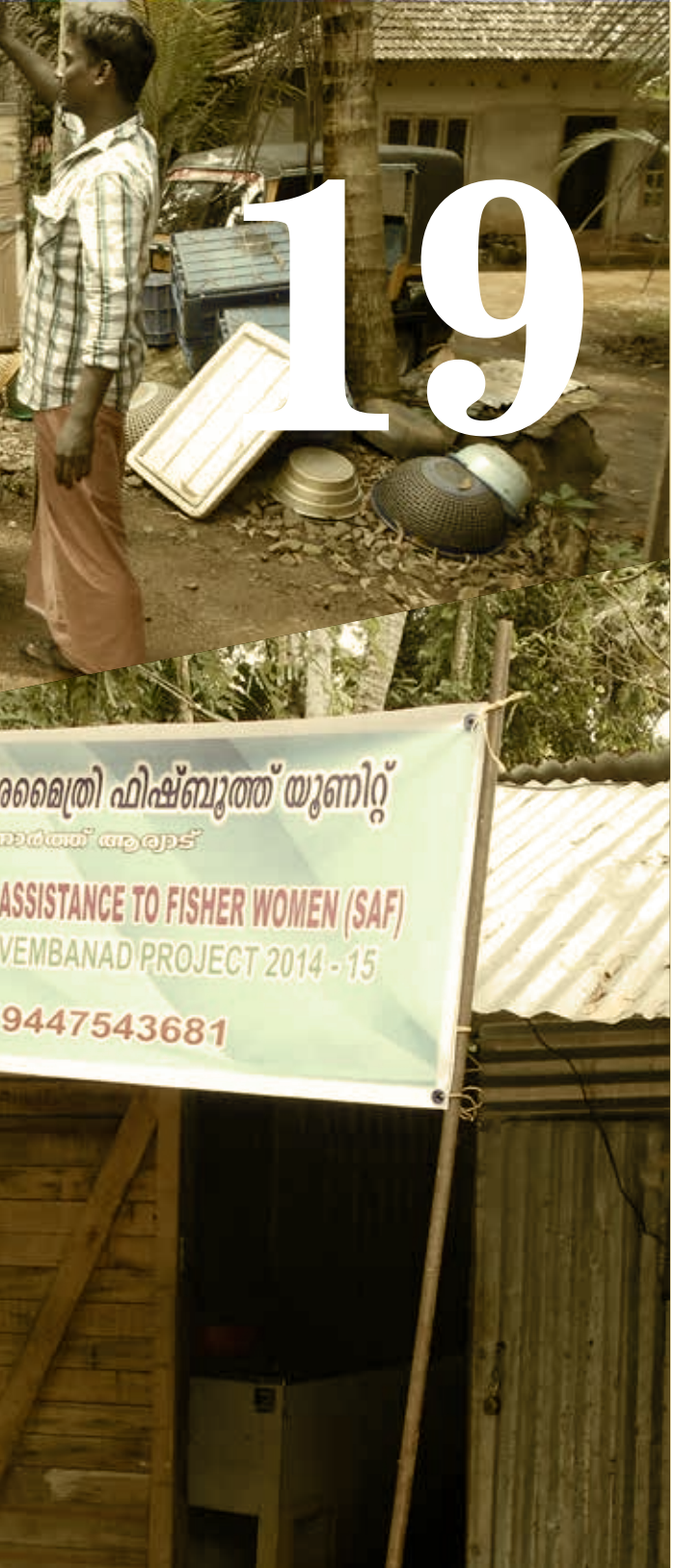
Fish Booth SHGs











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Fish Booth SHGs

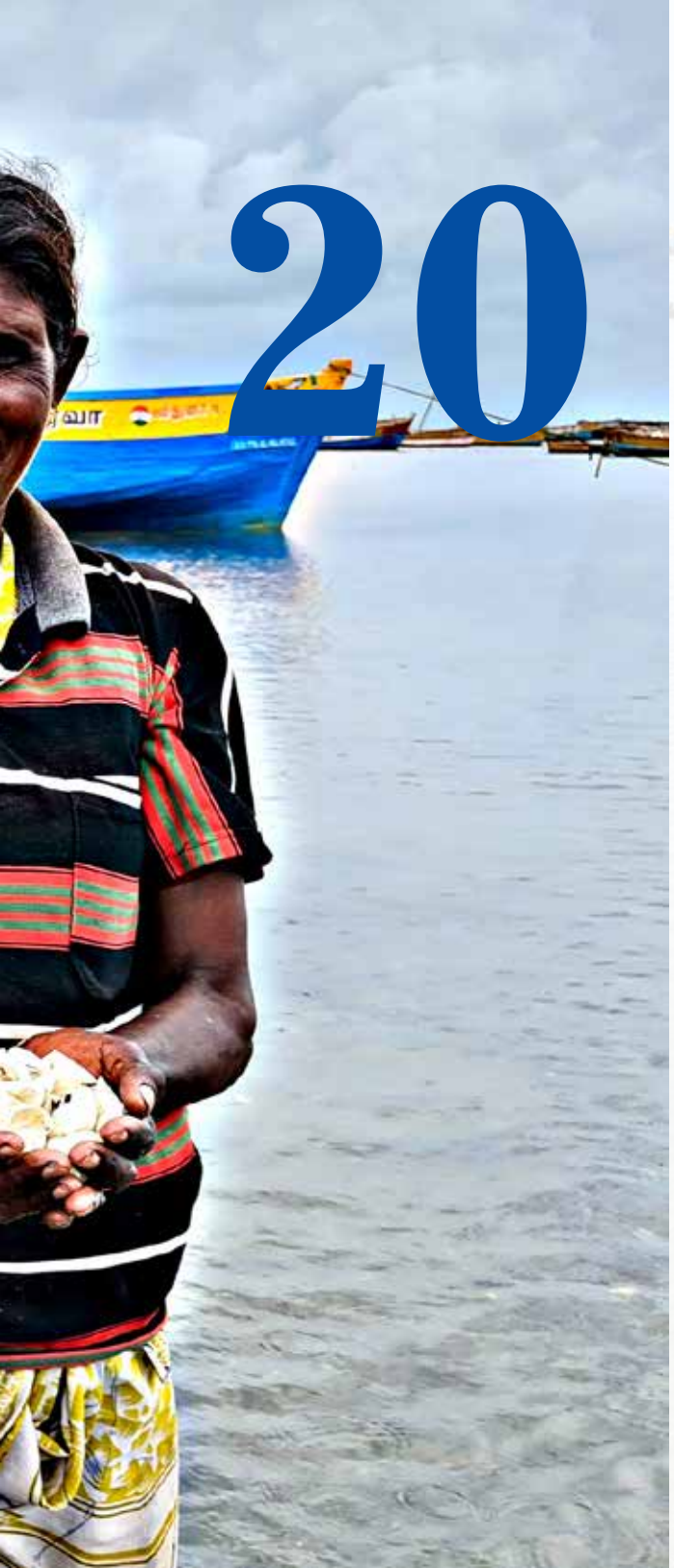
The Fish Booth 'Kayaloram' established for the mobilized women by the SAF in North Aryad of Alappuzha was taken into consideration for the computation of indicative economics.

Table : Economic analysis of Fish Booth SHGs (Cost/price in Rs)

Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Total fixed cost			169500						
Total Variable Cost			1518000			1518000			1518000
Interest on fixed cost @ 10 % per annum			16950			16950			16950
Depreciation @ 10 % per annum			16950			16950			16950
Total Annual Operating Cost (Rs.)			1551900			1551900			1551900
Gross Return (9204 kg of fish at an average price of Rs. 180/kg))	9204	180	1656000	9204	180	1656000	9204	180	1656000
Net Returns			104100			104100			104100
BC ratio			1.07						

Average Annual Net Return = Rs104100
The total Fixed Cost = Rs 169500
The Break-Even Point (BEP) = 11305 kg of fish at an average price of Rs. 180/kg
Pay Back Period = 1.63 years
Price per product = Rs 180
Cost per unit = Rs 164.9
P-C = 15.0

Clam Collection SHGs



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Clam Collection SHGs

Ample number of women mobilized SHGs engaged in clam collection are available in Ramanathapuram district of Tamil Nadu. The indicative economics of Clam Collection successfully accomplished by an SHG of women fisherfolk at Chinnapalam of Ramanathapuram district is projected here.

Table : Economic analysis of Clam Collection unit (Cost/price in Rs)

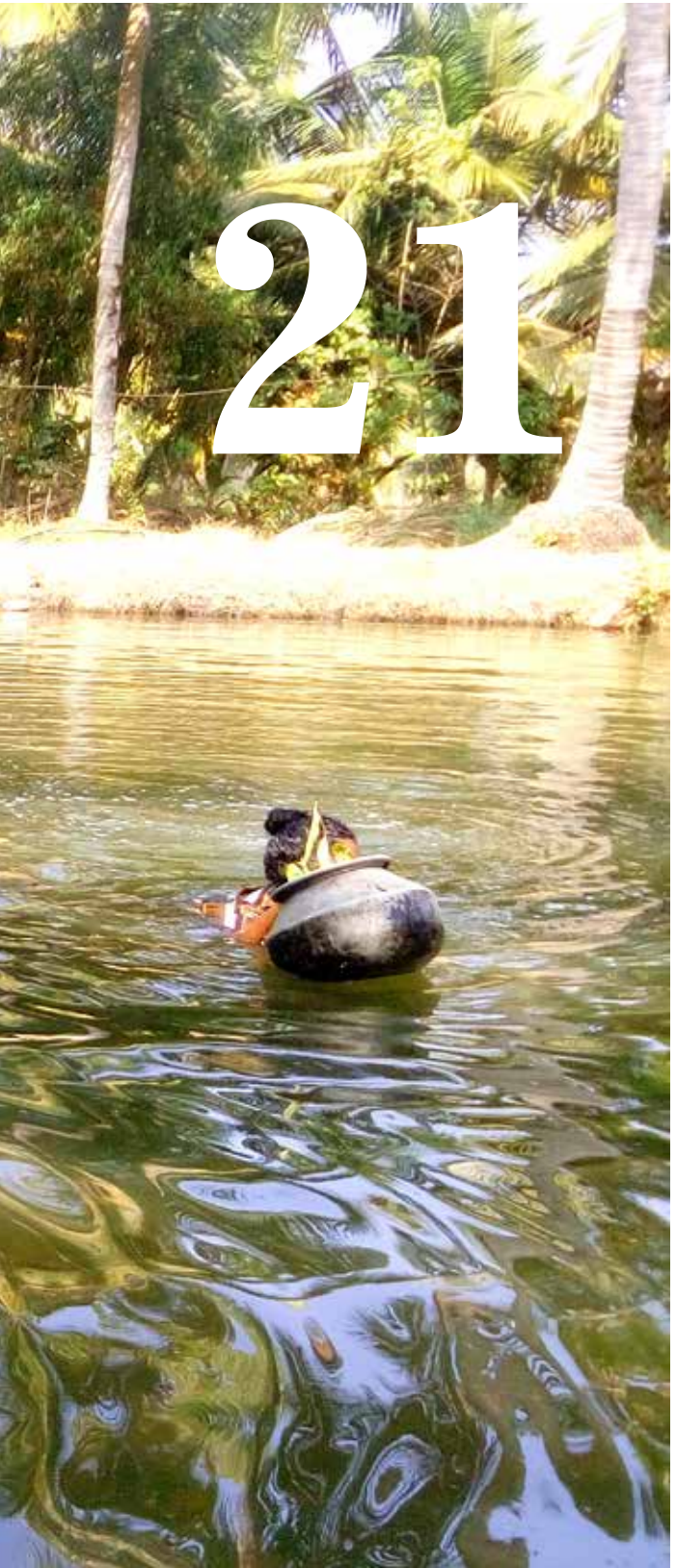
Particulars	First year			Second year			Third year		
	Units	Unit Price	Price	Units	Unit Price	Price	Units	Unit Price	Price
Fixed Expenditure									
Shed	1		70,000						
RCC Tanks (each 2 tonnes capacity)	3	15000	45,000						
Drying platform & iron nets	1		35,000						
Total Fixed Cost			**1,50,000**						
Variable Expenditure									
Labour charges for 10 members for 4 months @Rs. 300/- Manday)	1200	300	3,60,000	1200	300	3,60,000	1200	300	3,60,000
Transport charges			12,000			12,000			12,000
Chemicals (Container)	10	2500	25,000	10	2500	25,000	10	2500	25,000
Oil (litres)	400	130	52,000	400	130	52,000	400	130	52,000
Gas (Cylinder)	3	2300	6,900	3	2300	6,900	3	2300	6,900
Paint			1,100			1,100			1,100
Total variable cost			4,57,000			4,57,000			4,57,000
Interest on fixed cost (10%/annum)			15000			15000			15000
Depreciation (10%/annum)			15000			15000			15000
Total Operating Cost (Rs.)			4,87,000			4,87,000			4,87,000
Gross return (Selling clam @ Rs. 18/kg)	68,250	18	1228500	68,250	18	1228500	68,250	18	1228500
Net Returns (Rs.)			7,41,500			7,41,500			7,41,500

Average Annual Net Return = Rs. 7,41,500 Pay Back Period = 0.20 years Cost per unit = Rs.6.7/ Kg

The total Fixed Cost = Rs.1,50,000 Price per product = Rs.18/ Kg P-C = Rs.11.3

The Break-Even Point (BEP) = 13270 kg of processed clam @ Rs.18/kg

Hand Picking SHGs



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Hand Picking SHGs

The mobilized women group named as Karthika in Alilthara location in Vellamparambil of Ernakulm district was conspicuously noted for the Hand Picking Fish Units. These women drawn in to the water bodies and pick the fishes by hand and collect in small containers. They pool the collected fishes and sell in the market at a reasonable profit. This SHG Karthika was well noticed and was documented by CMFRI Gender Project as a poverty alleviation venture in remote coastal villages.

Fish Aggregating Devices: Social Entrepreneurship SHGs

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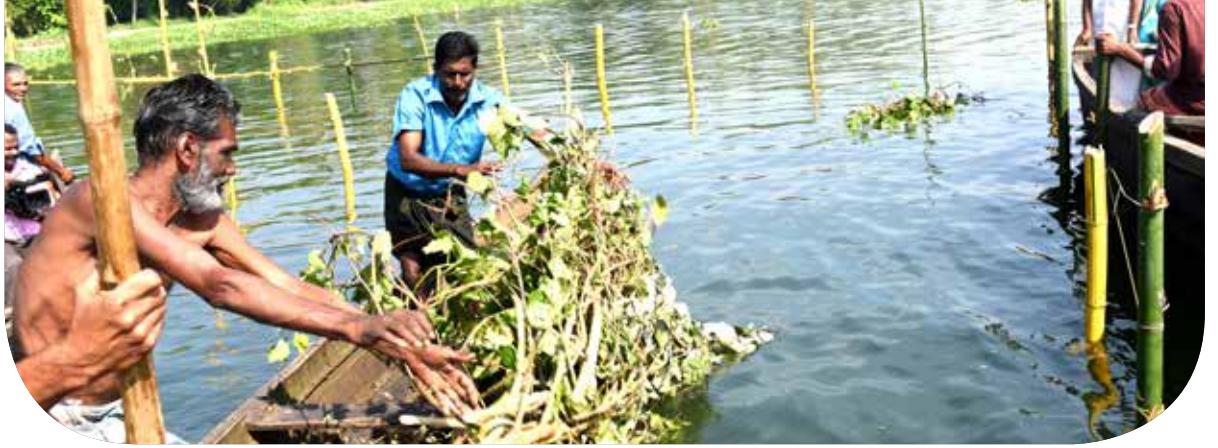
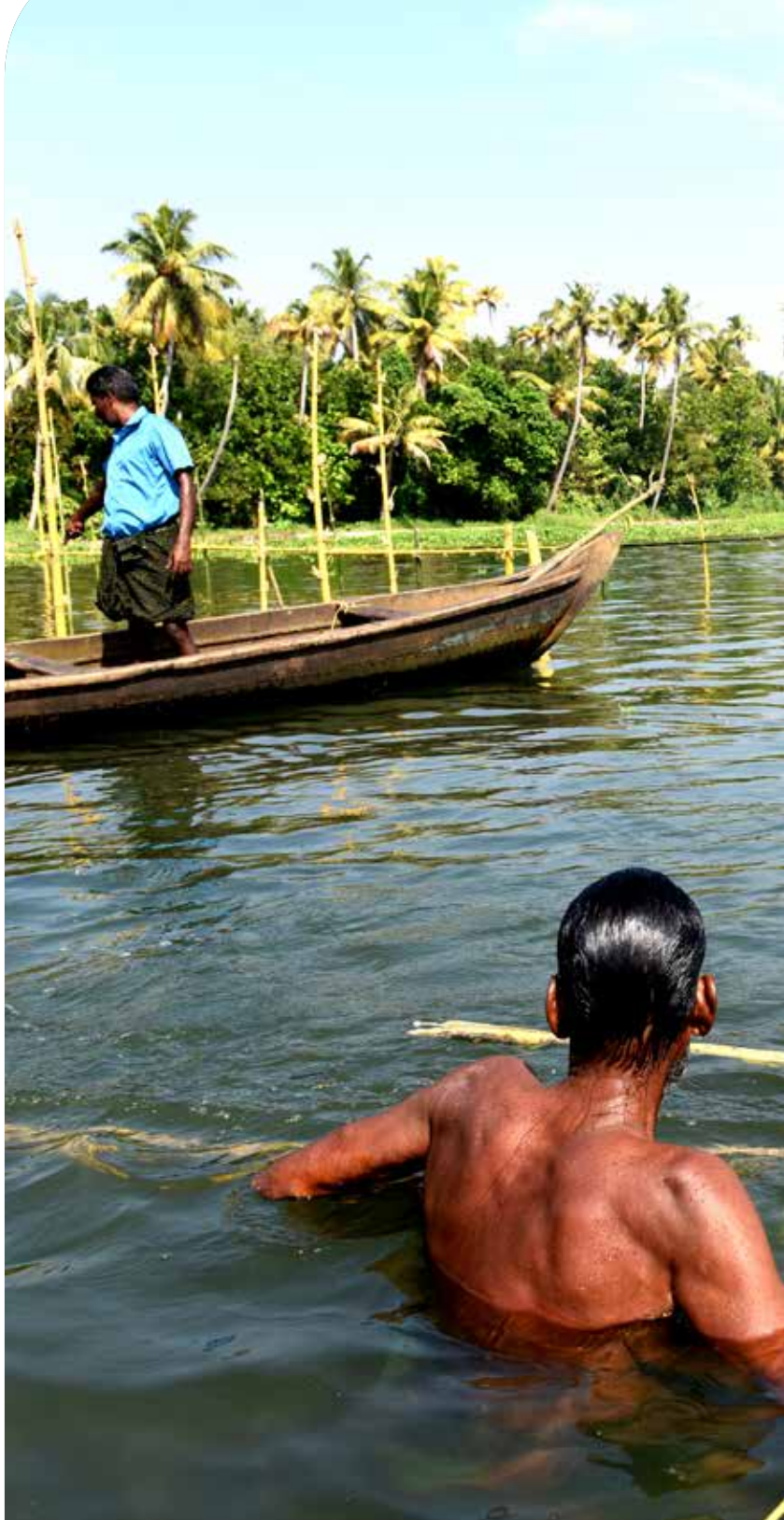


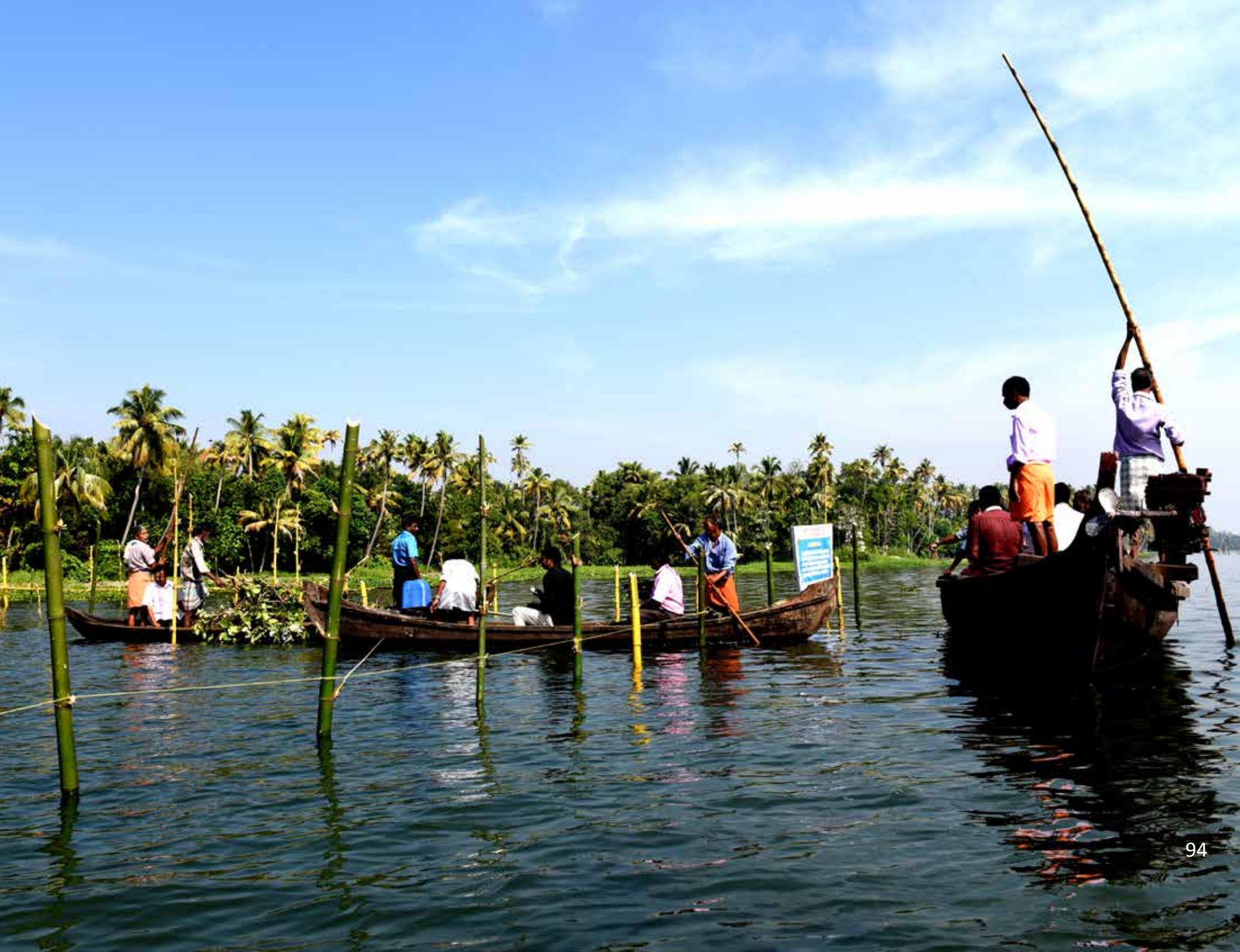
Fish Aggregating Devices: Social Entrepreneurship SHGs

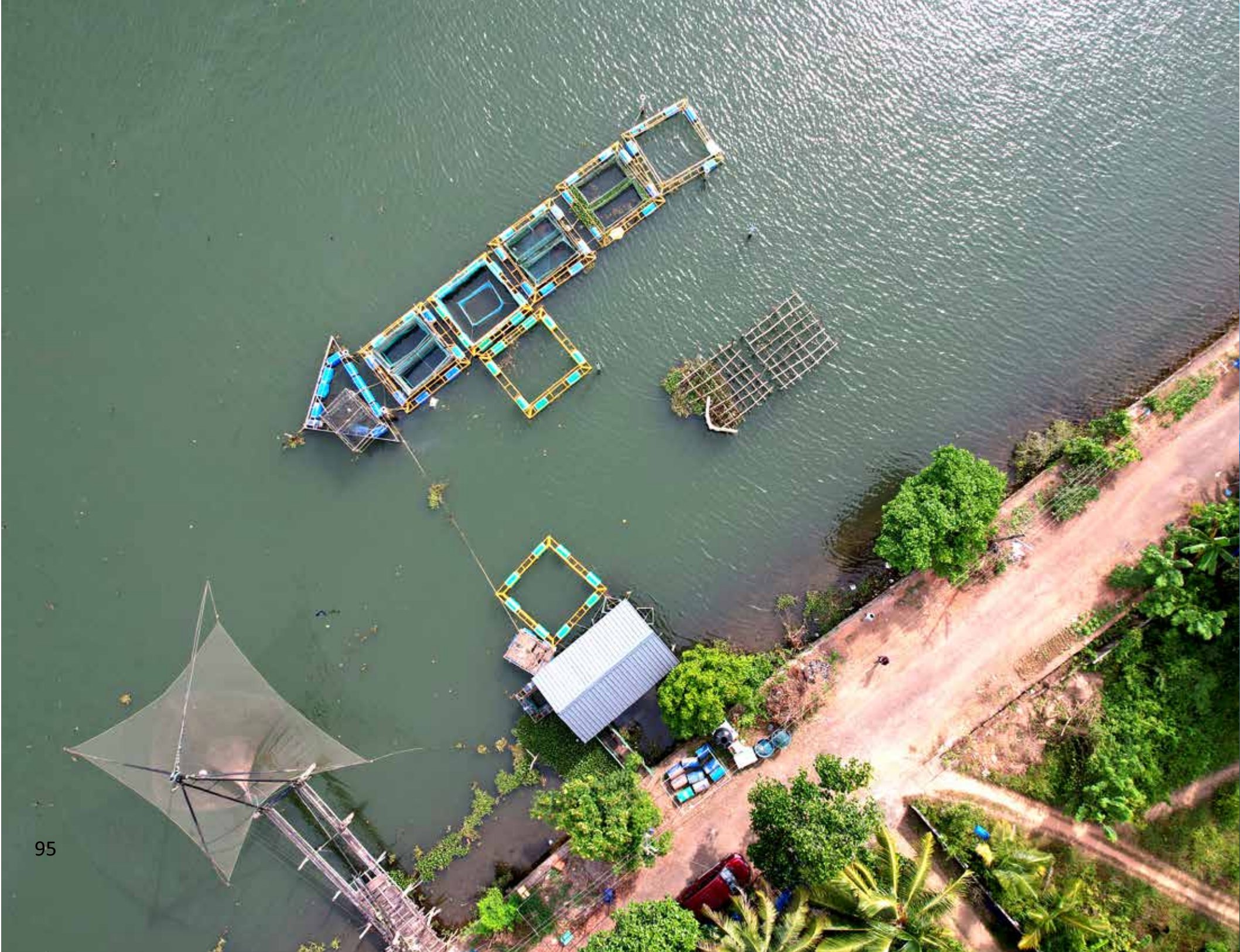
Social entrepreneurship on Fish Aggregating Devices (FADs) accomplished by a couple of SHGs in Mannanchery grampanchayat of Alappuzha district in which the backwaters are the popular tourist attraction in Kerala. It was indeed a wholehearted attempt of a group of nature loving fisherfolk without any consideration on micro enterprises and income generation. Matsyagandhi, Chithira, Ponnad, Kalpaka and Ambalakkadavu are the SHGs mobilized for this venture under the NGO: ATREE which has a broad mission in this endeavor. In order for patterns to change, it became necessary to involve community in decision making and planning. People in the area have traditional knowledge handed-down from past generations of observation and experience that is relevant to the understanding of how the environment works and what is needed to sustain it. When communities acquire the opportunity to control their resources, a bottom up management approach can work, if done in a way harmonious with environmental needs. Stakeholders, in this case are burdened by this management obstacle, and unable to use their regime to determine appropriate mechanisms towards a solution. Therefore, it is essential for stakeholders to have the power to execute decisions based on socio-environmental needs of the community, like 'Home of fishes': A democratic approach towards conserving fishes and livelihoods. The unified attempt of 5 SHGs in this social entrepreneurship venture irrespective of money motivation is an encouraging attempt initiated under the wholehearted co-operation of Mannancheri grampanchayat along with ATREE.

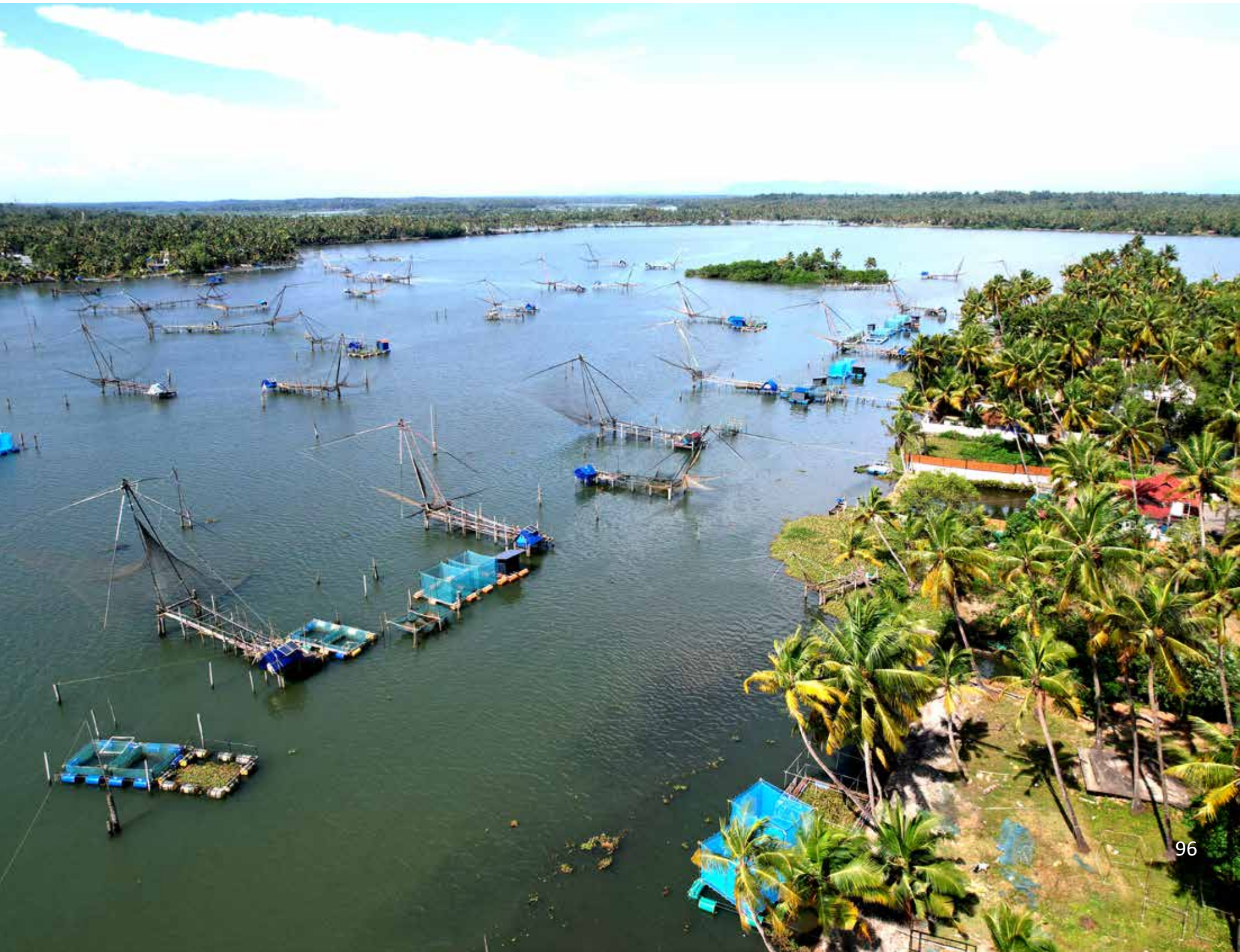
In this expedition, the major aim and methodology employed from CMFRI essentially consisted of practical extension coupled with extension research. Organizing farmer interactions for awareness creation and training programmes followed by research focusing on gender analysis, computation of Performance Level and Empowerment Index of SHGs and the success case study elucidation. The study stressed on undertaking gender analysis of the members of SHGs who accomplished the social entrepreneurship on FADs, assessing the Performance level of SHGs and Empowerment Index and elucidating the success case study of SHGs on social entrepreneurship.

When the commercial entrepreneurship measures performance in terms of financial terms, the social entrepreneurship is hard to measure since value they create is intangible. There is no difficulty in attracting venture capital and the sources in Commercial entrepreneurship: but the Social entrepreneurship lacks enough financial capital to keep running the venture. Ventures created by social entrepreneurs can certainly generate income, and they can be organized as either not for profits or for-profits. The long lasting benefits of the present context research and practical extension of social entrepreneurship through FADs highlighted also are yet to be explored through the probable abundance of fish catch after a specific span of time.









ACRONYMS: A GLANCE

ATREE	Ashoka Trust for Research in Ecology and the Environment
BCR	Benefit Cost Ratio
BEP	Break Even Point
CDS	Community Development Scheme
CMFRI	Central Marine Fisheries Research Institute
DST	Department of Science and Technology
ECB	Entrepreneurial Capacity Building
ECOSOC	Economic and Social Council - United Nations
EI	Empowerment Index
FAD	Fish Aggregating Device
FAO	Food and Agricultural Organisation
GD	Group Dynamics
GI	Galvanized Iron
GM	Gender Mainstreaming
HRD	Human Resource Development
ICAR	Indian Council of Agricultural Research
ICT	Information and Communication Technology
KVK	Krishi Vigyan Kendra
MPEDA	Marine Products Export Development Authority
NABARD	National Bank for Agriculture and Rural Development
NGO	Non-Governmental Organisation
PBP	Pay Back Period
SHG	Self Help Group
SAF	Society for Assistance to Fisherwomen
UNESCO	United Nations Educational, Scientific and Cultural Organisation

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