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## Women SHGs in The Midst of Covid 19 Pandemic: A Cautionary Glimpse on a Transition in Kerala Fisheries

Vipinkumar V.P.\*, Reshma Gills, Swathilekshmi P.S., Narayanakumar R., Ramachandran C., Shinoj Subramannian, Vikas P.A., Aswathy N., Athira P.V., and Ambrose T.V.

\*Principal Scientist & ATIC Manager, Socio Economic Evaluation & Technology Transfer Division, (SEETTD), ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi, India

\*Corresponding Author E-mail: [vipincmfri@gmail.com](mailto:vipincmfri@gmail.com)

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### ABSTRACT

*A study was conducted on the impact of Covid 19 pandemic among selected microenterprises of women's Self Help Groups (SHGs) in marine fisheries sector in Kerala State. Their level of performance and extent of empowerment were assessed through appropriate indices of measurement based on the data from SHGs of 16 different conspicuous fishery based micro enterprises in Kerala state. 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. The major micro enterprises of the SHGs studied were seafood kitchen unit, fish Cold Storage Unit, fish drying, ornamental fisheries, fish fertiliser, Fish Amino Acid Unit, bivalve farming, clam processing, cage culture, aquaponics, Chinese dip net, aqua tourism, integrated farming 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 Point (BEP) and Pay Back Period (PBP) of micro-enterprises. The same scale was used in the present Covid 19 pandemic phase to measure the present level of performance. The quantum of reduction in performance of the SHGs was assessed through structured data gathering protocols developed for the study. Personal interview with the SHG members on virtual platform was used as a medium of data collection. The present situation is elucidated through case studies.*

**Keywords:** Covid 19 pandemic, Self Help Group, Performance level, Break Even Point, Pay Back Period.

### INTRODUCTION

Women SHGs have a profound impact in Indian fisheries sector and the maritime state

of Kerala is no exception as regards the pivotal role played by women SHGs.

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The projects on Gender mainstreaming and impact of Self Help groups in Indian fisheries sector being undertaken by Central Marine Fisheries Research Institute (CMFRI) have brought out some valid success stories on fishery based microenterprises run by Self Help Groups though the assessment of level of empowerment, performance, Break Even Point (BEP) and Pay Back Period (PBP). But for the last one year, in the midst of Covid 19 pandemic there was a deleterious impact in all sector and many enterprises were either stopped or reduced the quantum of output and performance level to a drastic extent including those of women and the ongoing crisis associated with the pandemic and its multiple ramifications on fish production, livelihood security and market dynamics have exacerbated Kerala's troubles in fisheries sector (Ramachandran et al., 2020). On 30<sup>th</sup> January 2020, in Kerala the southern state of India reported its first case of COVID-19 and It's a well experienced fact that the pandemic Noval Corona Virus (COVID 19) has affected all walks of life and surprisingly it has the coincidence that the same day, Director-General of WHO avowed the Noval Corona Virus outbreak as a public health emergency of international concern. From that first day of its presence detected among the people to till date, the central and state governments have taken abundant measures including four phases of its lockdown from March 24<sup>th</sup> and which was subsequently stretched for realizing satisfactory containment of its infectious spread. These pandemic induced changes like supply and value chain disruption, market and price fluctuations, reverse labour migration and rapid increase in unemployment rate etc. affected all the sectors of the agriculture including fisheries in many ways. (Rakshit et al., 2020).

During the *Mahila Kisan Diwas* celebration on 15<sup>th</sup> October 2018, as much as 16 women leaders representing 16 different fishery based micro enterprises were honoured by CMFRI. In 2020 also, on 20<sup>th</sup> October, CMFRI has organised a virtual celebration of *Mahila Kisan Diwas* to interact with the same

women fisher leaders who had sustained their entrepreneurial activities. The virtual platform for celebration was selected because of the Covid 19 pandemic restrictions and social distance norms and rigid protocols preventing social gatherings. The telephonic interview and web based interactions in the online mode gave an opportunity to assess the present level of performance and quantum of reduction in output of these women based enterprises. A thorough assessment on the present context was done on web and telephonic interviews for assessing and the quick resolving methods and strategies adopted. A constraint analysis during the Covid 19 pandemic was undertaken with a structured interview schedule developed under the research project 'An inclusive perspective of gender mainstreaming in Indian Fisheries Sector' presently being undergone in CMFRI. (Vipin kumar et al., 2020).

## MATERIALS AND METHODS

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 during the pre-covid phase. 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 interview 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. (ECOSOC, 1999., FAO, 2011, 17., UNESCO, 2000, & Williams et al., 1995).

Similarly in the pre-covid phase, 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 fisher folk interaction meetings. 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 of 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  $\text{Fixed Asset} / (\text{Profit per unit} - \text{Variable cost per unit})$ . The Pay Back Period (PBP) i.e the years the unit takes to break even was estimated as  $\text{Initial Investment} / \text{Net Profit}$ , 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. (Vipin kumar 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.

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, Education level, Knowledge of Govt. programmes etc. arranged in 3 point continuum. The same tool used for the SHGs in the pre-covid phase was administered once again to gather information on the present status during the covid-phase over virtual online platform arranged in connection with the *Mahila Kisan Diwas* celebration of 2020. The comparison on the levels of performance of the 2 phases gave the quantum of reduction of activities. A recent visit of the SHGs and enterprises were also

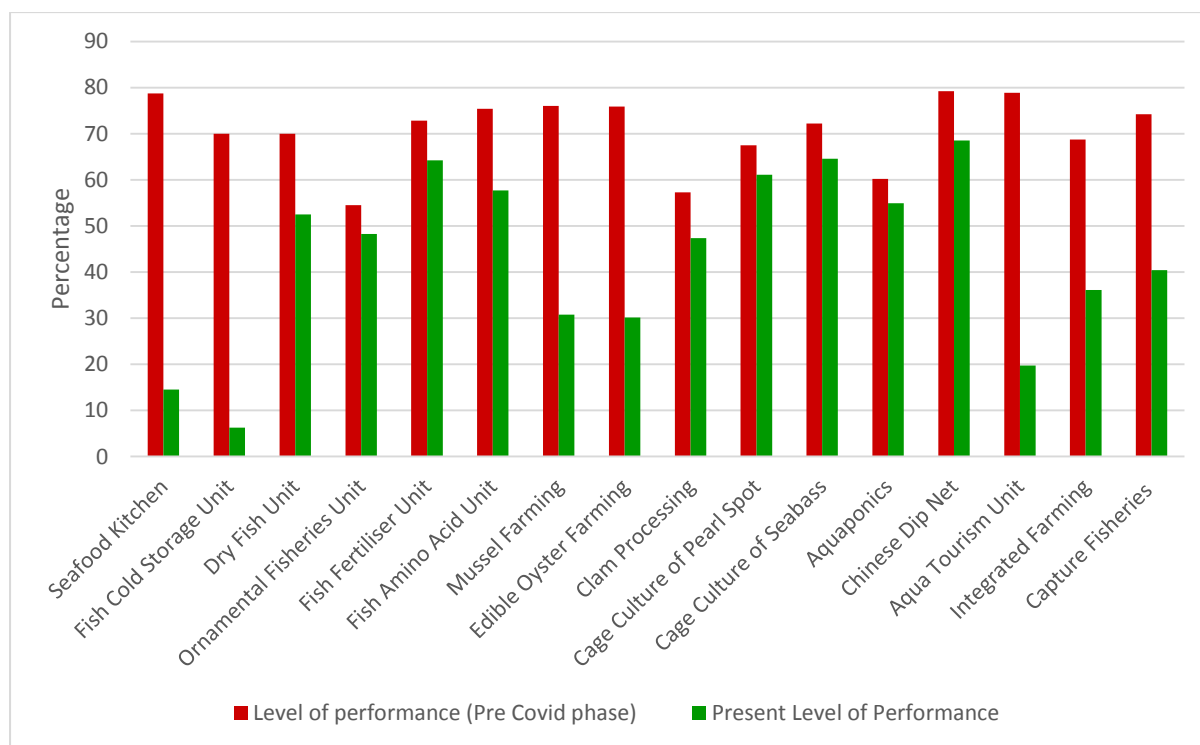
made with subject matter experts and quick survival mechanisms and precautions were discussed. All the 16 women fisher folk/ entrepreneurs from different parts of the Kerala, engaged in fishing/ fish farming and allied sectors who were honoured on stage during *Mahila Kisan Diwas* in 2018 were contacted on web to share their experience and vision and to express their expectations in the present Covid 19 pandemic scenario. Telephonic and web based virtual interviews were conducted to discuss the various issues faced by the fisherwomen in various phases of the fisheries and related activities related to capture and culture fisheries and the constraints being faced during the Covid 19 pandemic. Practical strategies have also been formulated to address the issues faced by the fisherwomen in the subsequent phases of project activities. A thorough assessment on the present situation and level of performance in covid 19 pandemic context was done through web based interactions and telephonic interview with SHG members, leaders and mobilising agencies to assess the survival strategies, future plans, resolving methods and independent case studies of the SHGs were drawn with a constraint analysis during the Covid 19 pandemic phase with a structured interview schedule developed under the project.

## RESULTS AND DISCUSSION

The microenterprises, their Break Even Point, Pay Back Period, level of performance assessed in the pre-covid phase and present phase, the quantum of reduction in performance estimated through the scales and tools are presented in the Table 1 and Fig 1. The highest and substantial quantum of reduction in performance was noticed for Aqua Tourism unit, Fish cold storage unit, Sea Food Kitchen unit, Mussel and Edible Oyster farming etc. and the lease reduction was noticed in aquaculture, cage culture, fish fertiliser unit etc. The quantum of reduction varied from 92.5 per cent to 8.75 per cent due to covid 19 pandemic impact.

**Table 1: Performance assessment of SHGs and micro enterprises in Pre-covid and present phases**

No	Micro enterprise	Break Even Point	Pay Back Period in years	Level of performance (Pre Covid phase)	Present Level of Performance (Covid phase)	Quantum of reduction in performance (per cent)
1.	Seafood Kitchen	34618	3	78.70	14.56	81.50
2.	Fish Cold Storage Unit	3730 kg	1.02	70.00	6.30	91.00
3.	Dry Fish Unit	4240	0.9	70.00	52.50	25.00
4.	Ornamental Fisheries Unit	221633 fries	1.28	54.50	48.27	10.50
5.	Fish Fertiliser Unit	1145 kg	1	72.80	64.21	11.80
6.	Fish Amino Acid Unit	361 units	0.85	75.40	57.68	23.50
7.	Mussel Farming	95.29	1	76.00	30.78	59.50
8.	Edible Oyster Farming	1132 units	1	75.90	30.17	60.25
9.	Clam Processing	8004 kg	2	57.30	47.39	17.30
10.	Cage Culture of Pearl Spot	30 kg	1	67.50	61.09	9.50
11.	Cage Culture of Seabass	187 kg	1	72.20	64.55	10.60
12.	Aquaponics	380 kg	0.35	60.20	54.93	8.75
13.	Chinese Dip Net	1800 kg	1.7	79.20	68.51	13.50
14.	Aqua Tourism Unit	29938 units	3	78.90	19.72	92.50
15.	Integrated Farming	-	-	68.75	36.09	47.50
16.	Capture Fisheries	-	-	74.21	40.45	45.50

**Fig 1: Comparison of Performance level of SHGs of Pre-covid and present phases**

### Case studies of the micro enterprises of women SHGs

The ephemeral depiction of the quantum of reduction in activities and performance of women SHGs of the above 16 enterprises in the present covid phase exhibited in the present study need not necessarily replicate the same reduction in performance level in a

different geographical 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. However, it just projects a transition phase towards a downward trend in most of the cases in the pandemic phase. The independent case studies

of each enterprises on comparison of the 2 phases in brief are also portrayed here for a thorough introspection.

#### **Seafood Kitchen: Poyya, Thrissur:**

In Poyya village in Thrissur district, tasty food items prepared by ‘Amma sea food kitchen’ entertained both foreigners and nationals in the pre covid phase. Under the direction of SAF (Society for Assistance to Fisherwomen) of Kerala Fisheries Department, and Agency for Development in Aquaculture, Kerala (ADAK), this unit established in 2015 in Poyya Neithal Heritage Village and was an exemplary example of women empowerment through mobilised Self Help Group. In this group, SAF implemented a holistic approach which increases confidence and hope among fisherwomen. Along with quality, tasty food providing special items such as pearl spot, prawn, crab, anchovies, squid, clam, mackerel are the major specialties of Amma sea food kitchen. A master plan submitted to the State Government to develop the model shrimp farm and training Centre at Poyya, near Thirssur, as an aqua tourism spot which includes setting up of a fisheries museum, a demo of fish culture and pokkali farming. The museum had the demonstration of age-old fishing methods, including fishing crafts and gears. Rearing of prawns, crabs, milkfish and pearl spot in the farm ponds were done and the fish grown in the farm was used to prepare traditional cuisine for tourists visiting the farm and the Muziris heritage site. The leader of the SHG Smt. Sumangala expressed the drastic reduction in output in the present covid phase. The average number of meals per day got reduced from the figure 250 to just 50 right now because of the pandemic. The performance level also got reduced to 81.50 per cent. The SHG itself also was not functioning for couple of months in the lockdown period.

#### **Fish Cold storage unit: Thuravoor, Alappuzha**

Fish being a significant dish in the daily nourishment of the Keralites, the fish marketing sector is a stable employment area for many people. As fish is a highly perishable

commodity a cold storage facility is inevitable for most of the units. A study on gender mainstreaming and economic feasibility analysis of SHGs of fish cold storage unit mobilised under SAF in Thuravoor of Ernakulam district undertaken last year gave a score of 70 as the Level of Performance in the pre-covid phase and they assured a continuous supply of fresh fish to the needy people from various parts of Ernakulam. After the commencement of Covid 19 Pandemic, the leader of the SHG Smt. Elizabeth expressed a massive decline in the economic profile of the cold storage unit as they were forced to put a break. Fish cold storage unit in Thuravoor of Alappuzha entitled as “Sea Son Matsyalaya” was entirely locked during the lock down period in the midst of Covid 19 pandemic and a quantum of reduction in performance level was 91 per cent and was highest among all enterprises.

#### **Dry fish unit: Pallithode, Alappuzha**

Fish drying as a preservation method is in existence long years ago and due to the perishable nature of fish fishermen needed a method to keep fish in usable form and to prevent from spoiling. As dry fish is a widely accepted food item, a successful SHG of women in Pallithode of Alappuzha district mobilised by SAF brought out good result and a study on the SHG during the pre-covid phase gave a performance score of 70 per cent. The leader of the SHG Smt. Jincy narrated the present stage and fortunately because of the availability and demand of shrimp, that was not much affected due to covid pandemic though there is a reduction in output to the tune of 25 per cent because of the lockdown.

#### **Ornamental fisheries unit, Pudhukad, Thrissur**

There were ample number of ornamental fish culture units of SHGs of women mobilised under SAF in Pudhukad of Thrissur and during the pre-covid phase, the performance score got reduced with a quantum of reduction to the extent of only 10.5 per cent, because the demand was there for aesthetic values even during covid phase. The leader of the SHG

Smt. Dhanya Raj of ‘Sona Aqua Farms’ expressed the slight difficulties met with during the lock down period, but the enterprise survived later, and now the groups are planning to upscale the ornamental fish hatchery in a wider scale along with edible fish soon when the pandemic repercussions start subsiding.

#### **Fish fertiliser unit: Engandiyoor, Thrissur**

Engandiyoor, a coastal village in Thrissur district where people mainly depend on fishing, fishery related activities and agriculture for their livelihood was conspicuous with the presence of an empowered women’s SHG engaged in fish fertiliser production under the guidance and supervision of SAF of the department of fisheries, Kerala. SHGs entitled Prakruthisree and Jaivasree consisting four members each recognized the need and reliability of bio-fertilisers for the existence of agriculture, fertile land as well as human life. They made a successful step in the production of bio fertilisers 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, the SHG generated the product entitled ‘ferti-fish’ and was in great demand. Since agriculture was given a prime concern during the covid pandemic phase, this enterprise also was found to withstand the obstacles and fortunately only a meagre drop in the quantum of output was observed only to the extent of 11.8 per cent as per the information conveyed by the leader of the SHG Smt. Maheswari.

#### **Fish amino acid unit: Elamkunnappuzha, Ernakulam**

Elamkunnappuzha village of Vypin island in Ernakulam district, which is one of the most densely populated islands in the world blessed with the assistance from Krishi Bhavan of the state depart of Agriculture has come forward with a new livelihood option for the people by uniting around 25 fisher womenfolk. Krishi bhavan led these women to the making of fish amino, which are a bio fertiliser as well as a bio pesticide. As it could be produced in a reasonable amount using the locally available

raw materials, 2 SHGs named *Jaiva Haritha Karshaka Sangam* with 14 members and *Karshakasree Vanitha Karshika Sangam* with 12 members have been formed. CMFRI studied the equity and the equality of these SHGs conducted interaction meets and undertook fisher folk training programmes signifying the importance of bio fertilizers and bio pesticides which are eco-friendly, made from organic matters and biological wastes. They are beneficial to the soil as they enrich the soil with microorganisms that help in producing organic nutrient in the soil and also restore the depleted nutrients of the soil. Fish amino acid is an effective organic liquid fertilizer made from mixing the 2 raw materials like sardine and chopped jiggery. The solution was used as a bio fertilizer and bio pesticide by adding 40 times of water. The present study on the assessment of performance in the covid phase, revealed a 23.5 per cent of reduction in output. The leader of the SHG Smt. Mary expressed the same constraints of fish amino acid enterprise.

#### **Mussel farming: Moothakunnam, Ernakulam**

Mussel culture in the coastal belts of potential maritime locations in Kerala is one of the profitable ventures undertaken by women SHGs. The unexpected demise of the leader of the SHG Smt. Sarala who was honoured in CMFRI during the *Mahila Kisan diwas*, 2018 was a tragic incident in mussel culture expedition. The present study in the covid 19 phase gave a substantial reduction to the extent of 59.5 per cent on an average. The present leader of the SHG was Smt. Baby expressed the constraints and admitted that the enterprise was badly affected during the lock down period.

#### **Edible Oyster farming: Vadakkekara, Ernakulam**

Similar to mussel culture, edible oyster farming also was a successful venture in Moothakunnam areas of Vadakkekara grampanchayat in Ernakulam district mobilised by Kudumbashree District Mission. There were 35 SHGs mobilised by women who successfully undertook oyster farming with 545 beneficiaries. The live oysters

produced and supplied by women SHGs were being sold to the star hotels like Taj, Casino, Brunton etc. in the major cities like Kochi, Mumbai, Delhi and Bangalore with a brand name 'Muziris'. But right now, in the midst of covid 19 pandemic, a drastic decline happened during lock down and the present study gave a substantial reduction to the extent of 60.25 per cent in the quantum of activities on an average. The leader of the group Smt. Praseela Shaji also ascertained the fact while data gathering of the SHG.

#### **Clam processing: Pookaitha, Kottayam**

In Pookaitha, a conspicuous island with lush greenery and striking river banks in Kottayam district situating in the border of Alappuzha, 42 families were residing and the difficulties encountered in water as the only means of transportation and a very poor socio economic status of the inhabitants made them displaced from the mainstream development activities for quite a long time. The Kerala State Department of Fisheries under SAF came forward to mobilise SHGs in Clam Processing and brought out a couple of development initiatives in the fisheries sector. Two SHGs named as Samudra and Pavizham were mobilized under *Theeramythri* project and 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. In the earlier interventions of gender mainstreaming studies on the SHGs in the pre-covid phase gave a performance level of 57.3 per cent a continued motivational attempts of CMFRI succeeded to a great extent in continuing the clam proceeding enterprise as a subsidiary venture. The leader of the SHG Smt. Vimala Prahladan expressed the hurdles encountered during the flood and now the covid-19 pandemic phase. But in the midst of all these epidemics, the perseverance of SHG members made them continue the enterprise, though there is a reduction of output to the extent of 17.3 per cent in the present covid phase.

#### **Cage culture of Pearl spot: Paravoor, Ernakulam**

Cage farming of potential candidate fish species was one of the exemplary technologies

initiated by CMFRI for many of the SHGs of fisher folk throughout the coastal belt of Kerala. Pearl spot cage culture undertaken in Edavanakkad brought out good BEP and PBP with a performance score of 67.5 per cent. As fresh fish was in great demand and Pearl spot being the fish of the Kerala state, the cage farming almost remained less affected as the quantum of reduction was just 9.5 per cent. The leader of the SHG Smt. Ambika Unni expressed the mode actions the SHG undertook to withstand covid 19 pandemic.

#### **Cage culture of seabass: Moothakunnam, Ernakulam**

Similar to the pearl spot cage culture, the farming of the candidate fish Seabass in cages also was an exemplary enterprise undertaken by a good number of SHGs. In Moothakunnam of Ernakulam district, the case study explored gave a good BEP and PBP with a performance score of 72.2 per cent. Similar to the case of pearl spot, as fresh Seabass was in great demand all the time, the cage farming venture of Seabass also remained less affected and the quantum of reduction was just 10.6 per cent because of the slight mortality during the lock down period. The leader of the SHG of Seabass cage culture, Smt. Smija conveyed the mode actions the SHG undertook to withstand covid 19 pandemic.

#### **Aquaponics: Cherai, Ernakulam**

Cherai *grampanchayat* of Ernakulam district was declared as 'Aquaponics Village' because of the intensively operating active home units of aquaponics in the panchayat. Marine Products Export Development Authority (MPEDA) came forward with an Interest Free Loan of Rs 15,000/- per unit through Pallipuram Service Co-op. Bank to the beneficiaries and the panchayat authorities gave all technical and background support for the venture. The unified perspective of fresh vegetables and fresh fish within every household was a well-accepted venture and as much as 70 units were in operation in Cherai along with a live fish Marketing Unit for commercialization beyond domestic consumption. The economic feasibility analysis of the enterprise in the pre-covid



phase gave the most substantial BEP and Pay Back Period was just 0.35 year. Similar to the case of cage culture because of the demand of fresh fish, this enterprise was found to be least affected in the covid phase as the quantum of reduction was just 8.75 per cent. The woman leader of the venture Smt. Umayamma explained the progress being planned for aquaponics to withstand covid 19 pandemic phase.

#### **Chinese dip net: Kumbalangi, Ernakulam**

Under *Kudumbasree* of Kerala State Poverty Eradication Mission, a couple of empowered women made a divergent thinking to operate laborious enterprises like Chinese dip net, and as a result in 2009, 12 women of Anjilithara and Chuduckadchira locations in Kumbalangi gram panchayat formed SHGs named as Aiswarya and Pavizham with the pioneering venture of Chinese dip net with an initial investment of 1.5 lakhs which was equally shared among 12 members. The panchayat ensured good background assistance through Community Development Scheme (CDS). As the progress was evaluated with reasonable profit margins, the groups installed the second Chinese dip net and it was an immense help and support to the families reflecting a spectacular economic empowerment. During season period, they use to get candid items like prawn, crab etc. other than fishes in the nets. Off seasons also assured a continuous availability of fish items on a sustainable basis. Those used to be auctioned for sale in the markets and presently they possess 2 Chinese dip nets, one small wooden boat and one gill net owned by them at their own cost worth approximately 3.5 lakhs. In the pre-covid phase, the economic feasibility analysis of the SHG undertaken by CMFRI gave a substantial BEP and PBP with a performance score of 79.2 per cent. Because of the demand of fresh fish in Kerala context, fortunately this enterprise also was not much affected in the midst of covid 19 pandemic phase and a quantum of reduction in activities to the tune of just 13.5 per cent only was observed for Chinese dip net operating SHG as per the data explored from SHG members and the open

expression of the leader of the SHG Smt. Asha.

#### **Aqua tourism: Narakkal, Ernakulam**

Matsyafed of Kerala state has developed an exquisite venture for promoting Aqua Tourism in Narakkal and Malipuram in Vypeen Island. Narakkal Aqua Tourism project was a huge 125 hectare brackish water fish farm in a village Narakkal with 4 culture ponds along with 3 nurseries. The fish farm almost lies inside the lake of Vembanad and the major type of fishes found in the farm are prawns, Pearl spot, mullets, tilapia, crab, green shell mussels etc. The popular Eco tourism project offers numerous facilities for spending a complete day with hammocks, swings or benches on the bunds under the shady coconut trees, or by fishing or even boating. The project of Kerala Fisheries Department and Tsunami Emergency Assistance Program (TEAP) for uplifting the life of fishermen community by enhancing Fish production, marketing, technical support and ecotourism, mobilised women SHGs named as Souparnika in Narakkal and Vandanam in Malipuram who were running the cafeteria which provides delicious homely meals and cooked fish items such as fish curries, fish fries, and fish pickles along with vegetables. A thorough assessment of the SHGs by CMFRI in the pre-covid phase gave a substantial level of performance score of 78.9 and this enterprise was observed to be most affected in the covid phase with the present level of performance score of just 19.72 projecting a drastic decline of 92.5 per cent. The leader of the SHG Smt. Lathi kamani narrated the big number of constraints as the entire closure of the aqua tourism centre for the last 8 months due to the country wide lock down and rigid norms and restrictions of covid 19 protocols. The centre restarted the functioning recently in October during Puja days and the average number of meals per day got reduced from the initial figure 600 to just 45 right now because of the pandemic. They are planning strategies for revival mechanisms to renew the vigour and anticipate a hype in output soon after the pandemic period.

**Integrated farming: Elamkunnappuzha, Ernakulam**

Integrated farming SHG lead by Mrs. Sreeji Babu in Elamkunnappuzha grama panchayat of Vypin included holistic mode of vegetable farming, ornamental fish culture, duck, poultry and goat rearing, tilapia culture etc. Covid 19 phase was a big obstacle leading to the stoppage of most of the activities because it was a unified collaboration of a lot of activities which were affected due to closure and lock down restrictions, and in the present assessment, the quantum of reduction in activities associated with integrated farming was to the extent of 47.5 per cent.

**Capture Fisheries: Chettuva, Thirssur**

When all the 15 cases dealt with fishery based micro enterprises, one exclusive case of a woman engaged in capture fisheries was particularly notable in. The only lady who goes for fishing in open sea, Smt. Rekha Karthikeyan was the one and only example of the daring woman recognised as India's first licensed fisherwoman who goes for fishing in open sea in Chettuva of Thrissur district. CMFRI explored the potential of this woman and nourished the bravery to assist her husband in open sea fishing and she could manage the entire household chores and bringing up 4 girl children along with daily sustenance means of livelihood as a seagoing fisherwoman. Immense opportunities were given for her case studies for further exploration and all these attempts made her famous through media and channels giving her ample recognitions and awards and these helped the family to a great extent to reduce their level of indebtedness and bank loans and Rekha continued to go for open sea fish farming in the pre-covid pandemic phase. But during the present covid pandemic context, due to the closure and restrictions and also due to cyclonic depressions in sea, she openly admitted a drastic reduction in intensity in going for open sea fishing. A quantum of reduction to the tune of 45.5 per cent was observed in the covid phase. Rigid protocols, norms and stipulations, household chores, oceanic depressions and some personal health

issues also attributed to this decline as per her open expression in the *Mahila Kisan Diwas* virtual celebration of CMFRI on 20<sup>th</sup> October, 2020.

**Insinuations from the case studies of enterprises in the Covid 19 Pandemic phase**

A brief portrayal as a cautionary glimpse of the decline transition phase of women SHGs in fisheries sector in the midst of Covid 19 pandemic in Kerala state is depicted in the present study. Extreme caution is inevitable when mankind all over the world is fighting to overcome the pandemic imposed punitive reality of mourning, ailment, economic hardships, job insecurity and unemployment by confining to the necessities and deferring all comforts and luxuries. Therefore, the present trend of a decline in the quantum of output among SHGs in the midst of the pandemic phase is also quite a natural phenomenon. Agriculture, fisheries and allied sectors being the producer of necessities, assumed with the unassailable role in prevention of famishment and to support the sustainable livelihood; hence it needs to be functional in this challenging time too. The present situation demands strengthening the risk management dimension of extension system to enable the farmers, fisher folk and rural producers to face any category of disasters. Extension has to work closely with all the supporting and developmental organisations in the interest of farming/ fisher folk community for widespread delivery of preventive and mitigative measures to reduce the loss to farming/fishing community at a minimal level. (Rakshit et al., 2020). The ICAR has bestowed state-wise guidelines for farmers/fisher folk to be followed in farm while harvesting, post-harvest operation, storage and marketing of the farm/fish produce during the lockdown period. The advisories were propagated with different electronic and print media including the social medias like Whats app, Facebook and Twitter. Being the most persuasive and trustworthy information sources for the rural farmers/ fisher folk community, extension agents have the social responsibility to interconnect facts and figures,

to correct the misapprehensions and fabrications which may contribute to the social stigma and hampered discrimination likely to occur in the community level. A frequent motivation strategy through online mode of communication techniques with these SHGs boosted the morale of women members to a remarkable extent and that concern was observable as at least some fresh fish demanding enterprises like aquaponics, cage culture, Chinese dip nets etc. remained less affected in the midst of the pandemic.

The marine fisheries sector in Kerala has endured a very ground-breaking supply chain modification right from the harbour in the lockdown period. Fishermen have been allowed to sell their catch without going for open auction as prevailed earlier in the harbour. However, the price of fish is decided by the Harbour Management Societies headed by respective District Collectors and which ensures the minimum fair price for the primary producers based on the quality. The Fisheries Department of Kerala, has developed an IT application to enable hassle-free selling of fish through advanced booking. To promote the social distancing, vehicles are allowed entry into the harbour for the purchase of fish on the basis of the booking. For those engaged in small business, market points are worked out and *Matsyafed* ensured the fish availability at these sockets in the quantity intimated in advance. A regulatory timeframe was also introduced in the fish markets from 7 am to 11 am only (Business Line, 3 April 2020). Similarly direct marketing is another possibility which needs to be promoted among women SHGs also. Hon. Prime Minister on 11<sup>th</sup> April 2020 during a video conference with chief ministers of all states to strategies on tackling the Covid-19, also suggested the states to incentivise farmers for direct marketing of farm/fish produce at their doorstep which would prevent crowding in 'mandis' and urged all states to reforms regulations in this line (The Times of India, 11 April 2020). Extension system should help the farmers/ fisher folk' SHGs to explore new

supply chain, connect with buyers and develop sustainable direct marketing model.

Another issue was related to supply chain disruption especially in case of perishable products like fish, vegetables and fruits which affected the women SHG based fishery enterprises. Both farmers and consumers are suffering and due to lockdown and non-compliance with social distancing norms, several APMC markets are either padlocked or partially functioning. Farmers/fisher folk could not send their produce to the market due to transport hitches and they are not succeeding to get a satisfactory price for their produce. In the present context, it is unavoidable to find out new supply chain of fish products, vegetables and fruits which will benefit both farmers/fisher folk and consumers. In the war front with the Novel Corona virus (Covid 19), Kerala made a very courageous step to protect the migrant workers from other state as 'respectful guest workers'. A convergence model, in which *Kudumbasree* (SHGs) poverty eradication mission worked in hand with the Local self-governments to use the ground-level resources to make sure that nobody, the socially and financially downtrodden in particular, starves as a result of the lockdown. After delivering indispensable commodities at doorsteps to those in isolation due to COVID-19 alerts, Kerala government has started distributing cooked foods to the needy even at their doorsteps free of cost by setting up community kitchens at all the 941 panchayats in the state. Whats app or SMS platforms are being generated for placing orders for meals. The panchayats were permitted to procure resources locally. The volunteer squads called "*Aarogya Sena*" comprising of local youth were moulded for the effective service provision (Deccan Herald, 28<sup>th</sup> March, 2020). Extension agencies particularly KVK can play a major role in engaging the reverse migrant labours on various avenues in farm and non-farm rural employment opportunities. ATIC and KVK of CMFRI initiated a venture of making available the fresh fish as well as live

fish supplied by SHGs through the sales counter for public in the pandemic period.

Extension System has the obligation of emphasising on localised production and consumption. It demands local extension strategy, starting with developing database of all agencies involved in technology dissemination and implementation of development programmes. In addition, database of resources, farmers, fisher folk, labour availability, technologies and markets should be developed through a 'best fit approach for the locality'. The localised approaches must give prime significance to the family farming/ home grown food production/ local SHGs products to meet the sustainability of the livelihood. In this regard, just like promoting cultivation of many unexploited, neglected and underutilised nutritious food crop varieties, vegetables, fruits, etc. farming avenues for candidate fish species through cages, bivalve farming, pen culture and processing and value addition of fish species etc. need to be promoted through specialised advisories. The farming/fisher folk community need to be more strengthened to develop localised markets and direct value chains to overcome the unforeseen price fluctuations and disruptions in the market structure due to similar pandemic or destructive conditions. Grass root level capacity building in gender neutral perspective needs to be formulated among the youth, especially women in fisheries sector to see the opportunities in on farm and off farm activities. This may enable them to see farming/fish culture and associated micro enterprises as a business initiative of SHGs and prefer fisheries as a viable livelihood option. Similarly mechanisms are to be developed for gender sensitivity, elimination of gender discrimination, improving access of women in fish value chains, establishment of separate amenities (like comfort stations and resting shelters etc.) for harbours/ LCs and markets with adequate consultations with fisher women stakeholders, official departmental agencies like SAF etc. for identifying entry points for gender

sensitive interventions. (Ramachandran et al., 2020).

As the pandemic situation at present is absolutely unpredictable on the indications of a recession in the nearby future, sustained interventions, long-lasting efforts, thoughtful commitments, futuristic determinations and untiring perseverance are needed to assist the women entrepreneurial ventures of SHGs in fisheries sector. The probability of the anticipated arrival of covid vaccines hopefully in the beginning of the next year would optimistically bring out a recovery to regain the vigour and vitality of the women SHG based enterprises. Hopefully this decline transition of women SHGs on these micro enterprises might be momentary in the present context and these all would revive to the normal expected standards after the pandemic recovery. But a holistic and concerted effort by joining hands of the stakeholders and governmental agencies emphasised in the above insinuations would be an extreme requisite to withstand the present deleterious pandemic scenario.

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