

## CHANGE AGENCY FACILITATED SOCIAL ENTREPRENEURSHIP TOWARDS COMMUNITY-BASED FISHERIES MANAGEMENT (CBFM) IN VEMBANAD LAKE, KERALA

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(Received: 12.04.2019; Revised: 26.05.2019; Accepted: 27.05.2019)

(RESEARCH PAPER IN FISHERIE SCIENCE)

**Abstract**

*This paper describes community-based fisheries management (CBFM) in Vembanad Lake through SHG facilitated social entrepreneurship venture mobilized by NGO. In the present study, an attempt was made to understand the social entrepreneurship attitudes of the SHG members. Level of participation in the social entrepreneurship venture was also studied. The perceived benefits from the change agency (NGO) were also quantified. Attitude towards social entrepreneurship was measured using the Social entrepreneurship scale. Data were collected from five SHGs and NGO staff. In particular, a model was developed on change agency facilitated social entrepreneurship towards CBFM. The model argued that social entrepreneurship could be a vehicle which contributes to sustainable environmental management.*

**Keywords:** Social entrepreneurship, Fish Aggregating Devices, Change agency, Community based fisheries management, Attitude

**Introduction**

Kerala situated on the South West coast of the country is blessed with rich freshwater and brackish water resources. The state is endowed with a total freshwater area of 3,32,000 ha consisting of reservoirs, rivers, ponds, lakes, tanks, irrigation tanks and paddy fields (DoF, 2018). A unique feature of the State is the occurrence of 53 interconnected backwaters (Kayals) and 44 rivers. The significant inland water resources of the state having much fishery importance are the 44 rivers (85,000 ha), 53 Reservoirs (44289 ha), and 53 backwaters (46129 ha) and other brackishwater bodies (65213 ha) (Harikumar and Rajendran, 2007). There are 113 inland fishing villages in Kerala with a population of around 2.35 lakh fisherfolk (Kerala fisheries statistics 2015-16). The Inland sector of the State contributes around 2.11 lakh metric tonnes of fish, which accounts a net value of Rs. 288866 lakh during 2015-16 (DoF, Kerala 2017).

Vembanad Lake is believed to have originated around 5000 to 6000 years ago during the post-glacial era. It is the second largest wetland in India and the most significant tropical wetland ecosystem on the country's southwestern coast. Vembanad Wetland has stretched across the districts of Alappuzha, Kottayam, Ernakulam, and Thrissur of Kerala. It is one of the Ramsar sites in India gaining international importance. The primary livelihood activities of the inhabitants include agriculture, fishing, tourism, inland navigation, coir retting, lime shell collection. The lake reduced to 37 percent of its original area, as a result of land reclamation and uncontrolled mining of shells from the shell collection. The discharge of sewage effluents and organic waste from the houseboat and industries into the water were responsible for the decrease in dissolved oxygen content in the water body. Due to this, the aquatic biodiversity of the lake faces a significant threat to their existence and thus affects the livelihood of fisherfolk. The construction of Thannermukkom barrage in the year 1976 had created some water quality problems such as reduction of the flushing action in the lake and thereby caused a proliferated growth of weeds and water hyacinth in the water body.

Here arises the concern about the fisher community who depends upon the wetlands for their livelihood. Quite a lot of NGOs like Kerala River Conservation Council, the Kuttanad Foundation, etc. already approached the state government for executing an integrated management-action-plan for the conservation of Vembanad Lake. In the wake of this background, Ashoka Trust for Research in Ecology and the Environment (ATREE), initiated the Vembanad Wetland Conservation Program, to conserve the wetland. Ashoka Trust for Research in Ecology and the Environment (ATREE) started Vembanad Wetland Conservation Program, to help retain the wetland.

It is a leading NGO performing social entrepreneurship venture in Kerala.

**The concept of Social Entrepreneurship**

A shift in viewing entrepreneurship has been noticeable recently. Due to the diversity in content and approach, the idea of social entrepreneurship was considered still ambiguous and hard to define. According to Choi and Majumdar (2013), a universally accepted definition of social entrepreneurship is hardly possible. Social entrepreneurship has been identified and explained in various domains, such as not-for-profits, for-profits, the public sector, and combinations of all three. Some researchers refers to social entrepreneurship as not-for-profit initiatives in search of alternative funding strategies, or management schemes to create social value (Austin et al. 2003, Lasprogata and Cotton, 2003), socially responsible practice of commercial businesses engaged in cross-sector partnerships (Sagawa & Segal, 2000 ) or as a means to alleviate social problems and catalyze social transformation (Alvord et al. 2004; Ashoka Innovators, 2000) and to others social entrepreneurship is or philanthropy (Ostrander, 2007). Social entrepreneurship as a concept denotes a business model of nongovernmental entities, aimed at fulfilling social issues and needs, by employing market-oriented and income generation methods that would achieve sustainability (Lehner 2011). Very few scholars conceive social entrepreneurship as a practice that a person or persons undertake exclusively or partially to create a social value of some kind (Peredo and McLean 2006). Thus, social enterprises are known to have a dual identity also referred to as a 'hybridity' (Austin et al. 2006, Certo and Miller 2008, Nicholls 2010). In a nutshell, the two objectives of social entrepreneurs are to solve identified social problem and to create self-sustaining organizations (Rawal, 2018).

In this paper, social entrepreneurship was given a relatively higher priority to promoting social value than economic profit. This study attempted to furnish the attitude of SHG members towards the social entrepreneurship. It also explored the relevance of social entrepreneurship through Fish Aggregating Devices (FADs) in Vembanad lake.

**Evolution of social entrepreneurship venture in Vembanad lake**

A group of fishermen in Mannanchery gramapanchayath willingly came forward with a broad vision on the conservation of Vembanad lake. They took the initiative of the conservation and management of Vembanad lake and demarcated some areas as a nonfishing zone by themselves. The responsibility of the fisheries ecosystem was shared between the user groups, the government, and the NGO. Both the community and the government/NGO were involved during the decision making, implementation, and enforcement processes.

ATREE and Mannanchery gramapanchayath authorities mobilized fisherfolk to form SHGs with a revelation on social entrepreneurship. The fish aggregating devices (FADs) are designed according to the traditional wisdom of the fisherfolk. They suggested the use of *padals* to create the FADs as artificial sanctuaries for the fish. Padal fishing was a conventional method of fishing in Vembanad Lake, which has been discontinued as it kills brooders. The bundles of foliage were submerged into the lake, creating ideal hideouts for fishes for hiding. Padal provided a perfect habitat for fishes to breed and hide from predators. A modification of this *padal* system was adopted for constructing FADs - where the padals were fixed to the lake bed and bamboo fencing was provided to prevent other fishers from entering into it. The community, with the support of local government institutions, declared the area around it as 'non- fishing zones.' The fisher folk avoid fishing in these areas, spread the message among others and Lake Protection Forum members keep a vigil eye to prevent fishing within the non-fishing zones.

### Community-Based Fisheries Management (CBFM) through an Organizational Development (OD) approach

It is becoming increasingly recognized that fisheries can be better managed when fishermen are more involved in the management (Pomeroy, et, al.,1994). Community-Based Fisheries Management (CBFM) has become very popular in developing countries due to the need for protecting traditional fishing grounds. Fisher communities are organizing themselves to form larger organizations to manage local resources and fight for their collective rights. CBFM gives fishing communities and fishermen primary responsibility for managing their fisheries resources (Graham et al., 2006). This is a type of local management practice involving resource users and giving them responsibility as resource managers. Conservation through social entrepreneurship uses fishermen's indigenous knowledge and expertise to provide information on the resource base and to complement scientific information for management of lake through installing FADs. In the study area, CBFM was functioned through lake protection forums. Lake protection forums are grassroot level democratic institutions pledged for the purpose of conservation and sustainability of Vembanad Lake. In 2008, a group of fisherfolk decided to make an effort to protect their livelihood by trying to conserve the lake's natural resources. They set up Lake Protection Forums (LPFs), legally registered bodies, which numbered 13 by 2011, spread across Alappuzha and Kottayam districts, each with 50 members. The LPFs declared these FAD installed areas "no-fishing zones" and erected bamboo fencing to prevent canoes from entering and casting. Small grants were provided by Panchayat and DoF to Lake Protection Forum members for constructing the fish sanctuary (FADs). Here instigates the concept of Organisational Development (OD). OD is a long-range effort to improve an organization's problem solving and renewal processes, mainly through a more effective and collaborative management culture. OD uses change agent (or consultant) to guide and affect the change. In this context, LPFs forms a reflection of OD particularly for solving the fishermen's problem where there is a close working relationship between the change agents

### Results and Discussion

#### Profile characteristics of SHG members

Table. 1: Profile characteristics of SHG members (n=50)

Socio economic variables	Frequency	Percentage
<b>Age</b>		
Up to 25	0	0
26-35	10	20
36-45	21	42
Above 45	19	38
<b>Religion</b>		
Hindu	42	84
Christian	5	10
Muslim	3	6

(ATREE, Panchayat, DoF) and the fishermen community. Change agents simply assist the group in problem solving processes and the groups solve the issues themselves.

### Methodology

The study was carried out in Mannanchery gram panchayath of Alappuzha district, Kerala. Mannanchery is a gramapanchayath in Alappuzha district which is situated about 10 km north of Alappuzha town and is blessed with its scenic beauty. The primary occupation of the people of this village has been coir making and fishing for the last few decades. The Vembanad lake forms the eastern boundary of this village. In Mannanchery gram panchayath, five SHGs were formed by ATREE, each SHG containing 10 fishermen as members. The members of SHGs (beneficiaries of ATREE) constituted the population for the study. A sample of 50 beneficiaries was selected as respondents following random sampling procedure. Data from the respondents were collected through personnel interview using a well developed and pretested interview schedule. The NGO ATREE was selected, and their programmes and activities were identified.

### Ashoka Trust for Research in Ecology and the Environment (ATREE)

Ashoka Trust for Research in Ecology and the Environment (ATREE) is a global non-profit organization which generates interdisciplinary knowledge to inform policy and practice towards conservation and sustainability. ATREE envisions a society committed to environmental conservation and sustainable and socially just development. Their mission is to generate rigorous interdisciplinary knowledge for achieving environmental conservation and sustainable development, to enable the use of this knowledge by policy makers and society, and to train the next generation of environmental leaders. ATREE is trying to address some of the conservation issues faced by Vembanad Lake by bringing together local communities and institutions to strengthen wetland management. Through its Community Environmental Resource Centre (CERC), established at Alappuzha, ATREE aims to build multi-sectoral and multi-stakeholder partnerships at the local level to influence decision making, increase coordination between stakeholders and strengthen their capacity to address the various issues related to the sustainable management of Vembanad Wetlands. Jalapaadom (Lessons on water) was a unique environmental education program designed for the students in the Vembanad region. The program aimed to create awareness among the students about the ecological functions of the lake ecosystem and about the socio-cultural and economic significance of wetlands. Ultimately this was expected to motivate the young generation to appreciate the values of wetlands, so that they become advocates for wetland conservation. ATREE along with the Regional Agricultural Research Station (RARS), of Kerala Agricultural University started a participatory fish census in 2008, titled the "Vembanad Fish Count", which continued each year, to prepare inventory of fish biodiversity in lake. The Vembanad fish count 2018 reported that the number of fish species in the southern region has decreased from 55 species (2017) to 49 species (2018)

<b>House type</b>		
Kutchra	0	0
Semi pucca	15	30
Pucca	35	70
<b>Education</b>		
Primary education	13	26
Secondary education	13	26
SSC or HSC	23	46
Graduation & above	1	2
<b>Experience (years)</b>		
Low (up to 10 )	9	18
Medium (11-20)	17	34
High (above 20 )	24	48
<b>Occupation</b>		
Fishing	31	62
Fishing+ agriculture	1	2
Fishing+wage laborer	13	26
Fishing+self employed	5	10
<b>Annual income (Rs)</b>		
<50000	34	68
50000 to 100000	14	28
Above 100000	2	4
<b>Beneficiaries involved in entrepreneurship activities</b>		
Involved	20	40
Not involved	30	60
<b>Activities involved (n=20)</b>		
Mussel farming	10	50
Shrimp farming	4	20
Fish farming	3	15
Value addition	2	10
Fish marketing	1	5

Profile of the respondents: The data showed that more than 40 percent (42 %) of the fishers were in the middle age (36-45 years) category. Majority of the respondents belonged to Hindu religion followed by Christians and Muslims. It was observed that majority (70%) lives in pucca house. The education level of shrimp farmers indicated that no one was illiterate. The majority (48%) of the respondents were having experience in fishing above 20 years, and 34 percent of the respondents were having experience between 11 to 20 years. As far as the occupation was considered, it was observed that 62 percent of respondents were involved in fishing alone and 26 percent in fishing + wage laborer. Majority of the respondents' annual income was less than Rs 50000/- and 28 percent had between Rs. 50,000 to Rs. 100000/-. Only four percent of respondents were earning above one lakh. It was observed that majority (60 percent) of the respondents were involved in different entrepreneurial activities. Fifty percent of them were engaged in mussel farming and 20 percent in shrimp farming.

#### Perceived benefits from the change agency

The perceived benefits from the change agency (ATREE) were also quantified and expressed in Fig.1 It was observed that the agency focuses more on sensitization and training programmes for the beneficiaries. In the past few years, ATREE's Community Environment Resource Centre (CERC) had interacted with and catalyzed action on the management and conservation of the Vembanad backwaters with various sections of stakeholders – state Water Resources, Fisheries, Agriculture, Revenue, Tourism, and Transport departments; communities pursuing traditional livelihoods (including paddy farmers and other agricultural workers). The NGOs actively involved in resource management and conservation. The team has organized a workshop on the draft Kerala Inland Fishery Bill (2010) with stakeholder groups, introduced fish sanctuaries to various Panchayats, and conducted the year's Vembanad fish census, among other ongoing conservation education and action initiatives. They also provide subsidies and inputs to farmers like fertilizers, feed, pesticides, seeds, etc.

#### Reasons for joining SHGs

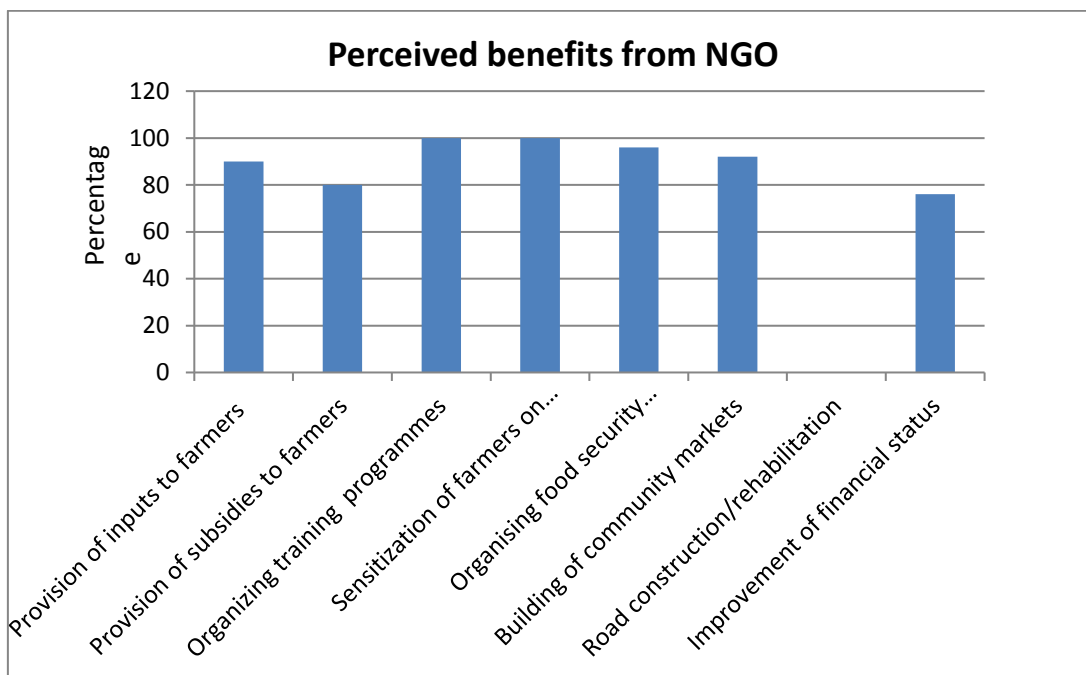


Fig. 1: Perceived benefits from the change agency (n=50)

Table. 2: Reasons for joining SHG

Reasons for joining	Frequency (n=50)	Percentage
Improve social status	7	14
Improve economic status	20	40
Endorse social concerns	36	72
Initiate group activitie	16	32
Influenced by friends & relatives	0	0

Reasons for joining the group were also quantified in the table. From the table, it was observed that the respondents formed the group to support social concern. This showed their social entrepreneurial attitude towards the fishing community. The majority (72 %) of the respondents stated that they joined the group with a social drive rather than economic motive. In this context, Kaur and Bains (2013)

statement hold true that small and medium enterprises play an important role in economic, social and political development in the form of employment creation, resource utilization, income generation and helping to promote change gradually and peacefully. It was reported that none of them were joined with an influence of their friends and relatives.

**Level of participation in the Social Entrepreneurship venture**

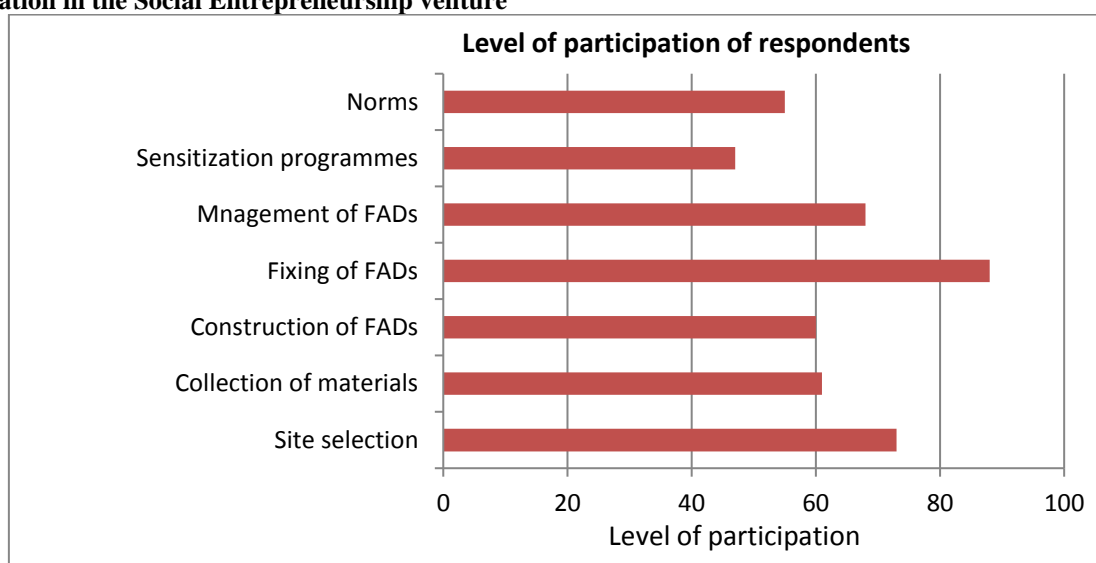


Fig. 2: Level of participation in the Social Entrepreneurship venture

Level of participation of the SHG members was measured and quantified. A perusal of the fig. 2 clearly shows the response of beneficiaries about the level of participation in social entrepreneurship on FADs. Maximum participation of the members was observed during fixing of FADs. The same study was done by Vipinkumar *et*

*al.*, 2018 on the gender participation of the SHG members in different activities for social entrepreneurship on FADs. The study revealed that the construction of FAD and Installation of FAD activities are being performed by both men and women.

About 73 percent of respondents involved in selecting the site for installation of FADs. Fifty-five percent of the members involved in the implementation of informal legislation activities for the protection and conservation of Vembanad lake.

Table 3 :

Social innovation	Technical innovation
Norms	Site selection
Sensitization programmes	Collection of raw materials
Management of FADs	Construction of FADs
	Fixing of FADs

The types of activities performed by the respondents were categorized into technical innovation and social innovation (Table no.). Technical innovation is to generate or realize a new idea, based on technology, capability or knowledge. It focuses specifically on technology and how to embody it successfully in products, services, and processes. In this context, technology-related activities contribute to the technological cluster. Level of participation in terms of technical and social innovation in social entrepreneurship accomplished by SHGs was also done. The activities like site selection, the collection of raw materials, construction, and fixing of FADs encompasses a technology component. Technical supports for SHGs were given by ATREE, Department of Fisheries and Mannanchery Gramapanchayath. Social innovation is about creating new social structures that allow issues of justice, education, environmental protection, sustainability, and community development to be reframed so that new solutions can come forward. Social innovations are new strategies, concepts, ideas and organizations that aim to meet social needs resulting from working conditions, education, community development, and health.

The accomplishment of strategies like the implementation of norms, sensitization programmes, and management of FADs were done by SHG members. Norms are the informal legislation, in which a situation or a typical behavior is expected and considered to be standard. Considering the norms, declaration of non-fishing areas and punishment for violation of fishing in the non-fishing zones were the actions performed by the fishers.

**Attitude towards social entrepreneurship activity**

Attitude towards social entrepreneurship was measured using the Social entrepreneurship scale. It is an eleven part scale developed by Dr. Shawn Carraher (Table 3). This tool was tested in his study entitled "Validation of a measure of social entrepreneurship." The study analyzed samples of social and traditional entrepreneurs and concluded that the tool is a valid instrument and reliable for future research in social entrepreneurship. A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to respond to all eleven statements.

Table. 4: Eleven statements for measuring social entrepreneurship attitude

Sl No.	Statements
1	Adopting a mission to create social value (not just private value).
2	Recognizing new opportunities to serve your mission
3	Engaging in a process of continuous adaptation related to your mission
4	Acting boldly without being limited by resources currently in hand in the fulfillment of your mission
5	Relentlessly pursuing new opportunities to serve your mission.
6	Caring deeply about the outcomes created by the fulfillment of your mission
7	Seeking to be a 'World Changer' through the accomplishment of your mission
8	Adopting a mission to sustain social value (not just private value)
9	Engaging in a process of continuous innovation related to your mission
10	Exhibiting a heightened sense of accountability to the constituencies served by your mission.
11	Engaging in a process of continuous learning related to your mission

( S.M. Carraher *et al*, 2016)

**The attitude of respondents towards social entrepreneurship**

The attitude of respondents towards social entrepreneurship was quantified and presented in fig 4. It can be glanced from the figure that the SHG members involved in the FAD ventures have a positive attitude towards social entrepreneurship. Kendall's W test was conducted for assessing agreement among the raters. Here, the test was

performed to find out whether any significant difference exists in rankings for the linkage perception expressed by the respondents about the social entrepreneurship. The results of the Kendall's W test (W = 0.762) revealed that the respondents agree with each other to a reasonable but not super high extent.

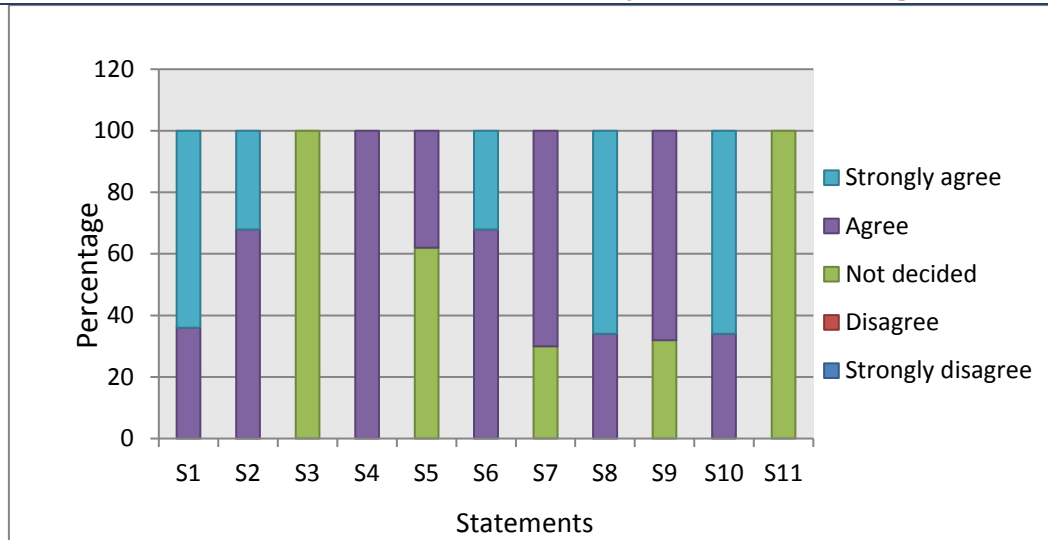


Fig.3 Attitude of respondents towards social entrepreneurship

**Model on change agency facilitated social entrepreneurship towards CBFM**

Social entrepreneurship and Community Based Fisheries Management (CBFM) has become a significant tool in promoting environmental and ecological sustainability as well as improving community access to eco-system services. CBFM has been driven by initiatives which are indigenous to local fishing communities promoting the agenda of social entrepreneurship. Using the field-based- data, this model explores the role of social entrepreneurship in helping the management of Vembanad lake in Mannanchery gram

panchayath of Alappuzha district, Kerala. The model argued that social entrepreneurship could be a vehicle which contributes to sustainable environmental management.

SHGs were mobilized for social entrepreneurship on Fish Aggregating Devices (FADs) venture under the change agency (NGO). It was an apparent attempt of a group of fisherfolk without any consideration on micro enterprises and income generation. Conservation and management through social entrepreneurship have made use of fishermen’s indigenous knowledge and expertise to provide a space for CBFM through installing FADs in the lake.

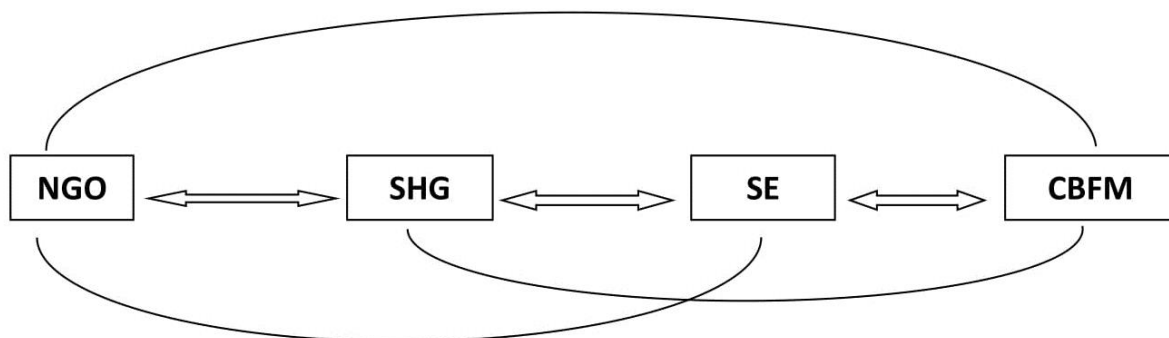


Fig4: Model on change agency facilitated social entrepreneurship towards CBFM

**Conclusion**

In this age of globalization, the role of social entrepreneurship assumes an imperative position in the new business paradigm. A study done by Dona et al., 2017 reported that the specialized SHGs venturing into input delivery/product development/marketing endeavor could focus on addressing the social needs of the fisher community. The study developed a model using SHGs addressing social issues adding the element of social goal shifting the entrepreneur groups to social entrepreneurs. Here in the present study being undertaken by Self Help Groups of fisherfolk in Mannanchery grampanchayath of Alappuzha district in Kerala brought out valid conclusions as it was understood that the SHG members involved in the FAD ventures have a positive attitude towards social entrepreneurship. Level of participation and perception towards the change agency was also studied. This paper aims to unveil the scenario of social entrepreneurship in Vembanad lake.

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