

An ICT Module on Microfinance and Coastal Indebtedness in Indian Marine Fisheries Sector

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The extent of coastal rural indebtedness in the marine fisheries sector is quite observable throughout the Indian coastal belts. The Micro Finance Institutions (MFI)/Self Help Groups (SHG) mobilised in marine fisheries sector do play a vital role in reducing the vicious circle of indebtedness among marine fisherfolk. An exact assessment on the indebtedness level has not so far been attempted among marine fisherfolk. The extent and quantum of indebtedness at a reasonable level of interest sourced out from the organised sector is an indicator of development since availability of finances boosts up the economic activity and capital formation in a region. The extent of indebtedness and the average outstanding debt per indebted households are comparatively less among fishermen as per the figures of institutional sources, but the affairs of the fisherfolk is really grim as they are virtually gripped in the hands of non-institutional agencies, namely the money lenders and traders for which legitimate data sources do not exist. Fisherfolk are attracted to the non-institutional agencies on account of simple procedures and timeliness in availing finance and for operational expenses which ultimately make them suffer from debt trap and vicious circle of indebtedness. Even when Fisheries sector possesses a major role in earning foreign exchange, the fisherfolk are still in the lower strata of the society because of indebtedness and are in the clutches of non institutional credit agencies. As cheap credit is always essential for development of Indian marine fisheries sector with a coast line of 8129 km, MFIs play a distinct role in this regard to offer low cost credit and thereby save the fisherfolk from permanent debt trap. The importance of the study is in this regard is to assess the extent of indebtedness among marine fisherfolk in mechanized, motorized and traditional sectors on the impact assessment of Microfinance on rural indebtedness in marine fisheries sector as well as and the role of credit agencies in providing credit, the credit utilization pattern as well as repayment behaviour of marine fisherfolk for better ecosystem management and ensuring sustainable development of the Indian marine fisheries sector.

Mammoo (2004) in a study on income, indebtedness and savings among fisherfolk of Udayapur and Gopalpur of Odisha under BOBP Programme said that fishing communities know two distinct credit sources: the traditional/informal and the institutional/formal. Traditional sources include moneylenders, middlemen, fish traders, boat owners, shopkeepers and pawn brokers. Institutional sources are mainly banks and cooperatives. Khan et al. (2005) in a case study undertaken on fisheries sector indebtedness in Baluchistan and Sindh of Pakistan, observed an empirical link between poverty and indebtedness and the mean debt to income ratio in low income group of fisherfolk was 3:4. Yunus (1999), the pioneer of microfinance projects in *Bangladesh* said the microfinance system enabled thousands of people by offering poor people loans, some fear it could lead to over-*indebtedness*, but microfinance has benefited the wider economy. Dynamics of twelve women's Self Help Groups in Marine fisheries sector of Malabar area of Kerala was studied and a strategy for mobilisation of an effective Self Help Group was developed by Vipinkumar (2007). Sathiadhas (2009) has conducted micro level socio economic studies on indebtedness in selected fishing villages in different maritime states in India. Jayaraman (2005) undertook the performance analysis of fisherwomen Self Help Groups in Tamil Nadu and reported that women SHGs played a substantial role in alleviating poverty and indebtedness in fisheries sector. Tripathi and Sharma (2007) conducted impact assessment of SHG-Bank Linkage Programme on Financial Behaviour of Rural Poor in Raebareli District in Uttar Pradesh to address the issue of sustainable development of the rural poor through SHG-Bank linkage using participatory approach. The livelihood analysis encompasses all the strategies and assets that individuals and households use to earn a living of which, micro finance plays a vital role. (CBCRM Resource Center (2003); Arciaga *et al*, (2002); Ashby (2003), NSSO (2003), Ministry of Finance (2007) and CED (2008) brought out the reports of indebtedness level in the Indian agricultural sector. Kudumbashree (2010) of Kerala state has spent Rs 121.88 crores for microfinance enterprises for women empowerment. In this context, the MFIs/SHGs of fisherfolk do have a pivotal role in reducing the indebtedness in the marine fisheries sector.

The present study was undertaken with the following objectives.

- To assess the extent of rural indebtedness and the role of various agencies in providing credit, the credit utilization pattern and repayment behaviour in marine fisheries sector.
- To study the impact of selected Microfinance Institutions/ Self Help Groups on rural indebtedness, supply of credit and empowerment of marine fisherfolk and elucidation of success cases of microfinance in entrepreneurial capacity building and thereby develop an Information Communication & Technology (ICT) Module on impact of microfinance on coastal indebtedness in Indian marine fisheries sector.
- To study the comparative appraisal of perception of fisherfolk on MFIs, Institutional and Non institutional credit sources in terms of selected attributes.

Methodology

Assessment of the extent of indebtedness among marine fisherfolk in mechanized, motorized and traditional sectors and the role of credit agencies in providing credit and the impact assessment of MFIs on coastal rural indebtedness, the credit utilization pattern and repayment behaviour in marine fisheries sector, supply of credit and empowerment of

marine fisherfolk and elucidating success cases of MFIs in entrepreneurial capacity building were the major aims. The project was undertaken in the entire coastal belts of India covering four zones such as North East, North West, South East and South West zones. The North East zone covered the states Odisha and West Bengal, North West zone covered Maharashtra and Gujarat, South East zone covered Tamil Nadu and Maharashtra and South West zone covered Kerala and Karnataka states. The map showing the locale of the study is presented in figure 1.

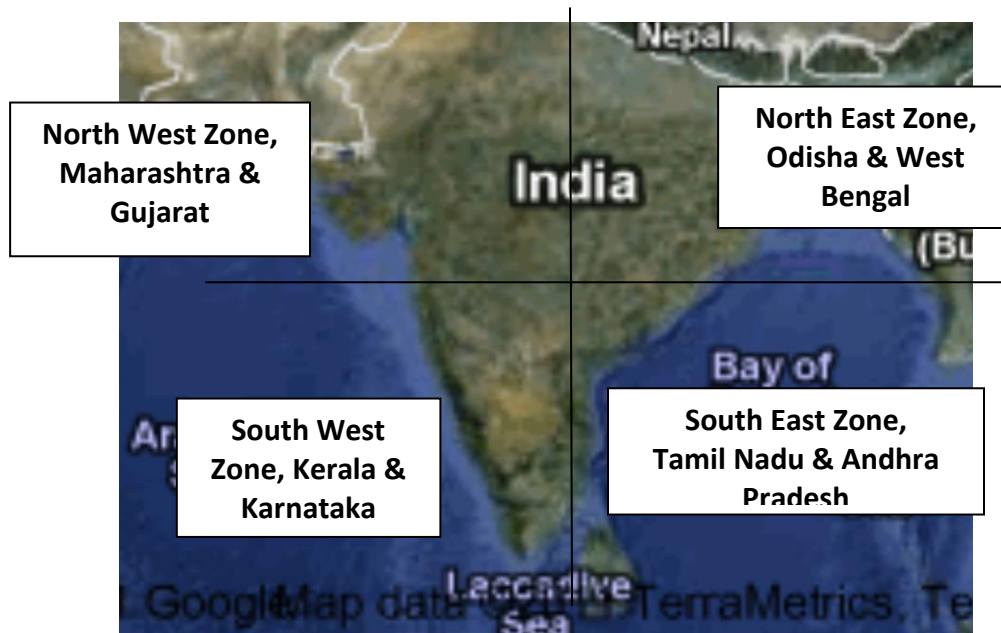


Figure 1: Map of Indian coastal belts showing the locale of the study

Situational analysis was undertaken through PLA in the selected potential maritime locations in the above mentioned zones and the marine fisherfolk from the various strata such as mechanized, motorized and traditional sectors will be taken as representative samples by random sampling method. A detailed study was made through personal interview of the fisherfolk to assess extent of coastal rural indebtedness and the role of various credit agencies in providing credit, the credit utilization pattern and repayment behaviour of marine fisherfolk with the help of a pre-tested and standardized data collecting protocol. In addition to this, the situational analysis took care of identification of MFI/SHGs mobilized in marine fisheries sector with fishery based micro enterprises or allied sector micro enterprises through PLA and systematic data collection processes. Any mobilized group venture with a productive economic activity initiated by thrift deposits and sustained by an appropriate micro-enterprise either independently or by the intervention of an external agency is considered an MFI for the study. This included SHGs also which finished the gestation period of 36 months with an economic activity initiated through thrift deposits and sustained by an appropriate micro-enterprise promoted by micro-finance either independently or by the intervention of an external agency like NGOs, private micro financial firms, banks etc. The dynamics of credit utilisation pattern, repayment behaviour and extent of debt redemption of the members of these MFIs were

assessed and the important dimensions contributing to their effectiveness were identified and thereby the present prospects and the constraints faced by MFIs in marine fisheries sector were documented. Data were gathered through personal interview with the pre-tested and standardized data collecting protocol from members of 12 selected MFIs in each state and non-members in marine fisheries sector comprising of 600 respondents from each state (Grand total 4800) to assess their impact on indebtedness level, supply of credit and empowerment. Success cases of MFIs on entrepreneurial capacity building which played a significant role in the poverty alleviation and debt redemption were also documented and the whole results were brought out as the ICT module which is a compilation of interactive multimedia cyber extension package consisting of video clippings, 2 D and 3 D animation movies, audio records, still picture gallery, ICT based presentations and synergies and outlines represented by full text of the 'e book' on microfinance on coastal indebtedness.

Similarly to study the comparative appraisal of perception of fisherfolk on MFIs, Institutional and Non institutional credit sources in terms of selected attributes, respondents were asked to assign ranks to each of the attributes to make comparison. The data obtained from the respondents were systematically tabulated for the purpose of analysis Garrett's Ranking Technique was used to identify and rank the attributes on the functioning of MFIs. Garret's ranking technique provides the change of orders into numerical scores. The prime advantage of this technique over simple frequency distribution is that the reasons and factors are arranged based on their importance from the point of view of respondents. The per cent position of each rank was converted into scores referring to the Table given by Garret and Woodworth (1969). Garret's formula for converting ranks into percent is given below:

$$\text{Percent position} = 100 * (R_{ij} - 0.5) / N_j$$

Where,

R_{ij} = Rank given for i^{th} factor by j^{th} individual

N_j = Number of factors ranked by j^{th} individual

For each factor, the scores of individual respondents were added together and divided by the total number of the respondents for whom scores were added. The mean scores for all the factors were arranged in descending order, ranks were given and the most important factors or reasons were identified. Thereby the comparative appraisal of MFIs, Institutional and Non Institutional credit agencies was made.

Results and Discussion

This study highlighted the indebtedness level of MFIs and non MFIs in Indian marine fisheries sector by taking into account 4 maritime zones covering 8 states. The major findings are synergised and presented as summarised tables and figures as follows. In general, the level of indebtedness and repayment percentage across the sectors of members of MFIs and Non MFIs are presented in tables 1 and 2 respectively as the comprehended results of the entire study.

Table 1: Level of indebtedness across the sectors of members of MFIs and Non MFIs

Zone	Level of indebtedness in Rupees (Lakhs)					
	Mechanised sector		Motorised sector		Traditional sector	
	Member MFI	Non member MFI	Member MFI	Non member MFI	Member MFI	Non member MFI
South West	0.68	1.95	0.44	1.64	0.50	0.37
South East	0.89	1.09	0.54	0.89	0.50	0.71
North West	0.28	0.40	0.19	0.25	0.12	0.08
North East	1.63	2.05	1.35	1.75	0.21	0.69

Table 2: Level of repayment across the sectors of members of MFIs and Non MFIs

Zone	% of Repayment of loans					
	Mechanised sector		Motorised sector		Traditional sector	
	Member MFI	Non member MFI	Member MFI	Non member MFI	Member MFI	Non member MFI
South West	14.10	26.75	40.52	22.60	32.00	14.00
South East	25.00	19.60	27.50	26.00	20.00	24.50
North West	10.00	12.00	8.00	8.00	12.00	6.00
North East	25.00	23.00	28.00	26.00	22.00	13.50

The study undertaken in South West zone, with 600 samples in Kasargod, Calicut and Ernakulam districts of Kerala state showed the average indebtedness of fisheries households in mechanised sector of non members of MFIs is Rs 1.95 lakhs and that of members is Rs 0.68 lakhs. In motorised sector, the indebtedness of non-members is Rs 1.64 lakhs and that of MFI members is Rs 0.44 lakhs. But in the traditional sector, the MFI members' indebtedness is Rs 0.50 lakhs and that of nonmembers is Rs 0.36 lakhs which indicates the necessity of strengthening the MFI ventures in the traditional sector. In the secondary sector, level of indebtedness of MFI non members is Rs 1.96 lakhs and that of members is Rs 0.80 lakhs. In the secondary sector, level of indebtedness of MFI non members is Rs 1.20 lakhs and that of members is Rs 1.10 lakhs. With regard to mariculture sector, level of indebtedness of MFI non members' was Rs 0.76 lakhs and that of members

was Rs 0.58 lakhs. It was also observed that the repayment capacity of MFI member fisherfolk was to the tune of 39 %. The study done in Karnataka state of South West zone, with 600 samples from the various sectors from Mangalore Fisheries harbour, Dakshina Kannada district showed the average indebtedness in the primary sector as Rs 4.25 lakhs, that in the secondary sector as Rs 3.42 lakhs and that in tertiary sector as Rs 0.32 lakhs. The case studies elucidated from Manjunatha SHG, Dakshina Kannada district, and the MFI 'Mathsya', Navodaya, Amrithavarshini and Bhramambika, revealed that the MFIs scored high in all the attributes and all members expressed maximum satisfaction over the performance of MFI which brought about a socio-economic transformation, poising towards a higher standard of living in their livelihoods.

The study undertaken in South East Zone comprised 600 samples in Nambuthalai, Ervadi, Thirupalaikudi north, Vedalai, Victoria nagar Susaiyaparattinam and Olaikuda in Ramanathapuram district and Tharvikulam, Tuticorin and Punnakkayal of Tamil Nadu from mechanised, motorised and traditional sector and MFIs. Majority of marine fisherfolk are indebted to fish traders and boat owners followed by banks and private moneylenders. Bank levied 7 to 14 per cent interest, whereas microfinance institution levied 7 to 16 per cent interest on the principle amount. Private moneylender levied 24 to 60 per cent interest on the principal amount, interest repayment by the borrowers were either weekly or monthly. MFIs significantly reduced the dependence of fisherfolk on private moneylender, considerably reduced the indebtedness level and increased their repayment capacity. MFIs assisted the fisherfolk in meeting their expenditure on purchasing of nets, repairing boats and for buying other accessories. It was observed that 39 per cent of marine fisherfolk population was indebted to fish traders followed by 37 per cent in banks. The study found that 26 per cent of SHGs were able to repay 81-100 per cent of the loan which they borrowed. The South East Zone also comprised 600 samples from mechanized fishing families at Visakhapatnam fishing harbor and motorized/non motorized fishing families at Lawson's bay fishing village, Visakhapatnam, Annavaram, Bheemlipatnam, Uppada and Kappudibbulapalam villages. The results showed the level indebtedness among fisherfolk in mechanised sector 65 per cent and that in motorised sector is 59 per cent. It was also observed that the MFI member fisherfolk of DWCRA had tremendous repayment capacity of the loans. The level of indebtedness got reduced to the tune of 75 per cent after joining MFI and their repayment capacity improved to the extent of 65 per cent in mechanised sector. In motorized sector, the level of indebtedness increased to the tune of 65 per cent after joining MFI, but in the mean time the repayment capacity also got improved to the extent of 53 per cent.

In the North West zone, the study undertaken in Versova of Greater Mumbai district, Achra and Vengurla of Sindhudurg district, Ratnagiri, Thane and Raigad districts of Maharashtra from 600 samples comprising mechanised (45per cent), motorised (30 per cent) and traditional (25 per cent) showed that the level indebtedness among fisherfolk is 21 per cent among nonmembers of MFIs (Vipinkumar and Shyam, 2013). Similarly, in Gujarat state of North West Zone, Porbunder and Veraval locations have been selected for data collection from mechanized, motorised and traditional fisherfolk of members and nonmembers of MFIs comprising a total of 600 respondents. The level of indebtedness is 19 per cent and it is lesser for members of MFIs and their repayment capacity is to the tune of 26 per cent. There

existed a significant difference in the level of indebtedness across the member fisherfolk of MFIs and non-members on account of their higher repayment capacity, less risk involved and easiness in availing credit.

The study undertaken in North East Zone comprised 600 samples each from West Bengal and Orissa states. The selected locations are Diga, Contai, Junput and Dadunpatra and Kakadwip in West Bengal and Aryapilly and Gopalpur of Ganjam district and Astrang and Konark of Puri district and Jagatsinghpur and Balasore areas of Orissa state from mechanised, motorised and traditional sector and MFIs. MFIs significantly reduced the dependence of fisherfolk on private moneylender, considerably reduced the indebtedness level and increased their repayment capacity. The results showed the level indebtedness among fisherfolk in mechanised sector 32 per cent and that in motorised sector is 24 per cent. It was also observed that the MFI member fisherfolk have good repayment capacity to the tune of 29 per cent in West Bengal and 36 per cent in Orissa. The level of indebtedness got reduced to the tune of 36 per cent after joining MFI and their repayment capacity improved to the extent of 56 per cent across the sectors.

With regard to the savings and level of indebtedness across the states, the table 4 shows the frequency of respondents having savings and the level of indebtedness. The figure 2 also shows the level of indebtedness across states. The highest indebtedness is noticed in the state of Orissa (89 per cent) followed by West Bengal (88 per cent). The least indebtedness is noticed in Maharashtra (78 per cent).

Table 3 : Savings and Level of indebtedness across states

No	States	Frequency of respondents having Savings				Total	Level of Indebtedness (%)
		Nil	< 0.5 L	0.5 -1 L	>1 L		
1.	Maharashtra	468	104	20	8	600	78
2.	Karnataka	510	60	24	6	600	85
3.	Kerala	498	82	16	4	600	83
4.	Tamil Nadu	522	60	16	2	600	87
5.	Andhra Pradesh	474	96	22	8	600	79
6.	Orissa	534	50	16	0	600	89
7.	West Bengal	528	54	18	0	600	88
8.	Gujarat	486	88	26	0	600	81
	Total	4020	594	158	28	4800	83.75

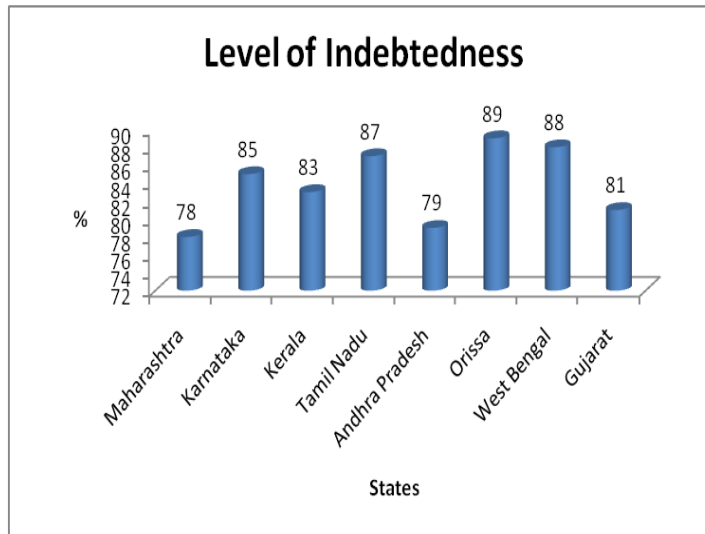


Figure 2 : Level of Indebtedness across states

Similarly the sources of credit when compared across the states, it was found that the banks were the major source of loans followed by private money lenders and co-operatives shown in Table 4 and Figure 3. However it varied from state to state, in such a way that the major source in Kerala was Co-operatives and Orissa, West Bengal and Gujarat topped for private money lenders. When all the maritime states were pooled together, the major source in general became banks.

Table 4: Sources of credit across the states

No	Sources	MH	KNT	KER	TN	AP	OR	WB	GUJ	Total	%
1	Banks	372	386	132	204	94	194	178	84	1644	42.26
2	Co-operatives	22	52	192	38	116	36	42	48	546	14.03
3	Private money lenders	26	26	124	200	126	204	218	248	1172	30.12
4	Friends / Relatives	10	4	2	4	46	38	36	72	212	5.44

5	Fish traders	8	8	6	42	4	8	12	4	92	2.36
6	Boat owners	4	4	2	4	4	6	8	4	36	0.92
7	Shop keepers	4	4	2	4	2	4	10	2	32	0.82
8	Jewel loans	2	6	16	10	64	38	14	6	156	4.05

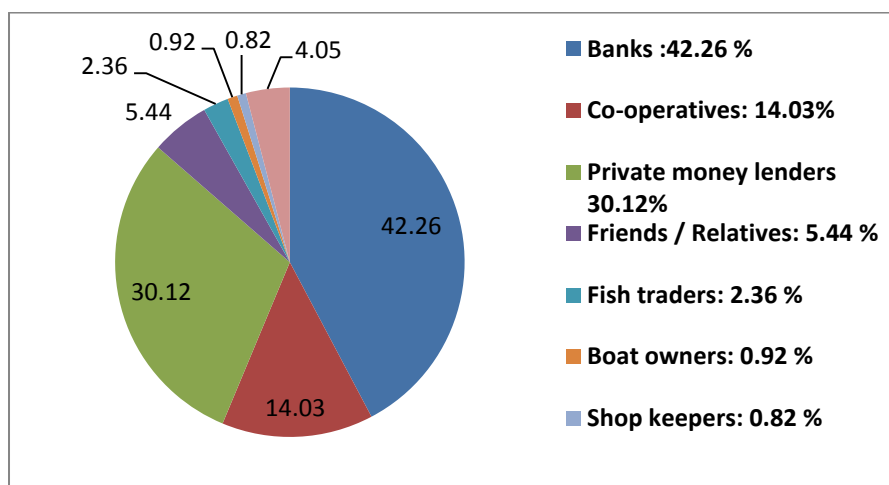


Figure 3: Sources of credit across the states

Similarly the purposes of credit throughout the maritime states in the four different zones were compared in the table 5 and figure 4.

Table 5: Purpose of credit across the states

No :	Purpose	States									%
		MH	KNT	KER	TN	AP	OR	WB	GUJ	Total	
1	Purchase of craft/ gear and other fishing related equipments & repair	252	252	120	76	206	320	394	494	2114	48.28
2	House construction / Land purchase	6	30	312	104	54	142	38	12	698	15.94

3	Marriage expense	14	24	80	40	102	6	34	4	304	6.94
4	Education	10	14	18	36	102	4	12	6	202	4.61
5	Health and Social Security	10	8	22	32	4	46	6	38	166	3.79
6	Any others (business, purchase of vehicles)	204	224	12	286	48	48	50	22	894	20.44

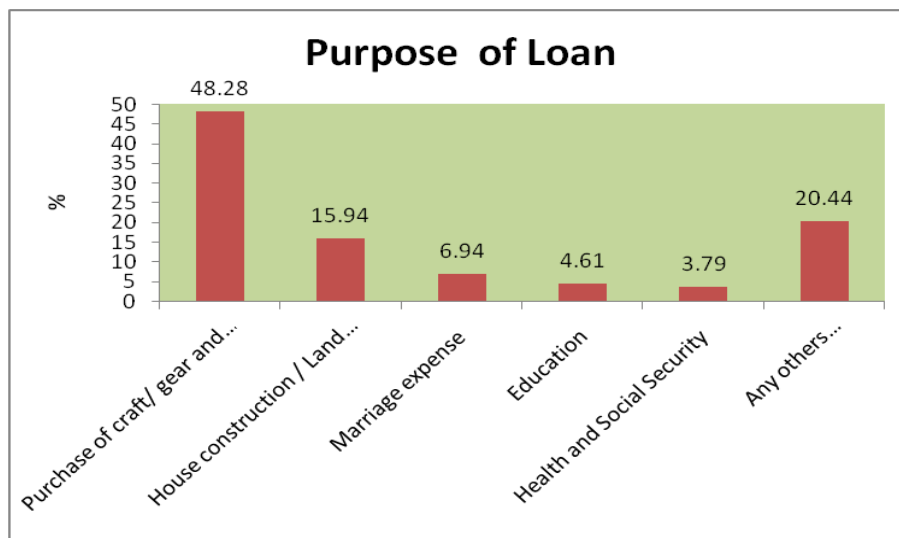


Figure 4: Purpose of credit across the states

Examining the table 5 and figure 4, it could be observed that more than 50 per cent of loans were used for Non Performing Asset (NPAs) creation other than fishing related items and only 48.3 per cent was used for purchase of craft/ gear and other fishing related equipments & repair. This can be considered an introspection of purposes of credit being utilised in the marine fisheries sector across the maritime states of the country.

Development of ICT Module

As a part of the second objective, an Information Communication Technology (ICT) Module was developed on impact of microfinance on coastal indebtedness. This is an interactive multimedia cyber extension module on Microfinance Institutions /Self Help Groups in the marine fisheries sector of Indian coastal belts. Success cases of MFIs on entrepreneurial capacity building which played a significant role in the poverty alleviation and debt redemption were also documented and the whole results were brought out as the ICT module.

The content of ICT module:

The ICT module developed was the first of its kind which is a compilation of interactive multimedia cyber extension package consisting of video clippings, 2 D and 3 D animation movies, audio records, still picture gallery, ICT based presentations and synergies and outlines represented by full text of the 'e book' on microfinance on coastal indebtedness synchronized with visual effects and entertaining background music. The entire package is made available in a DVD and on clicking the respective component; the viewers can enter the arena of each component of cyber extension package as per their preference. The components of the module are as follows:

Video clippings:

The ICT module consisted of eight short movies on the impact microfinance and coastal indebtedness, two each representing the zones identified for the project such as North East, North West, South East and South West zones. The viewers on clicking the respective locations of the maritime state or the zone, the movies will be projected pertaining to that particular zone.

Animation movies:

The ICT module covered 2 dimensional and 3 dimensional animation movies on microfinance and self help groups with sketches and diagrammes drawn by the artists of the Socio Economic Evaluation & Technology Transfer Division of CMFRI depicting the formation, stabilization and self-helping phases of Self help groups and the impact of microfinance institutions on coastal indebtedness.

Audio records:

Another component of ICT module was the audio records of microfinance and importance of Self Help Groups mobilisation with dubbed voices of professionals. Extreme care was taken to use the human resources of the division, to reduce the expenditure. The audio narrates the genesis and different phases of SHGs such as group formation, stabilization and self helping phases and the strategy for mobilising an effective Self Help Group.

Picture Gallery:

The still picture gallery of the ICT module consisted of the still photographs taken throughout the coastal belts of the country on the project work on coastal rural indebtedness and impact of microfinance in the marine fisheries sector in two different sections such as Orissa, West Bengal, Andhra Pradesh and Tamil Nadu of east coasts and Kerala, Karnataka, Maharashtra and Gujarat of west coasts with titles.

ICT based presentations:

The ICT oriented presentations covered the power point slide presentations used in various stages of project conceptualization and approval to the final results of the project with expert supervision on the quality on the slides which can be used as a manual for subsequent research on microfinance and Self Help Groups concerned with indebtedness as a practical reference material.

Synergies and Outlines:

The last component of the ICT module entitled as synergies and outlines on clicking will lead to the full text of the project report in the PDF version which was released as the 'e book' of CMFRI entitled 'Coastal Rural Indebtedness and Impact of Microfinance in Marine Fisheries Sector' by the Hon. Director General, ICAR, Dr.S.Ayyappan at Mandapam Regional Centre of CMFRI. The results of the study revealed Odisha as the state with

highest level of indebtedness (89 per cent) and Maharashtra as that with the least level of indebtedness (78 per cent). The study also showed that the level of indebtedness of members of MFIs was less compared to the non-members. Though the indebtedness was more in certain cases, the level of repayment was found to be significantly improved in MFIs. In the traditional and tertiary fisheries sectors, there is an extreme necessity of strengthening the MFI ventures. Success stories documented on entrepreneurial capacity building, debt redemption and poverty alleviation in the ICT module can serve as a practical manual/case model for mobilizing MFIs in any key areas for the ecosystem management and sustainable development in the Indian marine fisheries sector.

Appraisal on the functioning of the MFI / Institutional / Non - Institutional credit agencies

As the third objective, an appraisal of the attributes for institutional, non-institutional and micro-finance has been evaluated by Garret and Woodworth ranking and found that MFIs were better in many of the attributes compared to other sectors for all the states holistically when taken into consideration (Table 6).

Table 6: Appraisal on the functioning of the MFI / Institutional / Non - Institutional credit agencies

S.No	Attributes	Institutional		Non Institutional Credit		Micro Finance Institution	
		Score	Rank	Score	Rank	Score	Rank
1	Easy approval process	53.7	II	40	III	57.0	I
2	Diverse areas of funding	46.3	II	43.4	III	62.8	I
3	Eligibility of recipients	62.8	I	50.0	II	37.2	III
4	Maximum loan amount	45.4	II	56.0	I	41.9	III
5	Need for collateral security	55.9	I	51.3	II	41.9	III
6	Provision of longer loans	51.3	II	41.5	III	56.3	I

7	Provision of loan grace periods	52.5	II	42.4	III	55.5	I
8	Easy repayment schedule	52.9	II	40.7	III	54.6	I
9	Low interest rate	56.7	I	42.4	III	46.6	II
10	Stringent for default of payment	44.9	II	59.2	I	44.1	III
11	Hidden cost and concerns	49.5	II	59.0	I	41.4	III

Conclusion

The study makes an attempt on the assessment of the extent of indebtedness among marine fisherfolk in mechanized, motorized and traditional sectors and the perceived impact assessment of Microfinance Institutions (MFI) on coastal rural indebtedness and developing an ICT module on impact of MFIs on coastal indebtedness. Tripathi and Sharma (2007) conducted an impact assessment of SHG-Bank Linkage Programme on Financial Behaviour of Rural Poor in Raebareli District in Uttar Pradesh to address the issue of sustainable development of the rural poor through SHG-Bank linkage using participatory approach. The study also revealed that fishermen are most often trapped under debt to fish traders and they are not able to come out from the trap. Microfinance institutions/ Self Help Groups significantly reduced the dependence of fisherfolk on private money lenders and considerably reduced the indebtedness level and increased their repayment capacity. The results of the study are in agreement with impact assessment study of MFIs in Karnataka coastal belts. (Vipinkumar and Swathilekshmi, 2012, Vipinkumar *et al*, 2013) MFIs considerably assisted the fisherfolk in meeting their expenditure on purchasing of nets, repairing boats and for buying other accessories. It could be observed that the level of indebtedness in MFIs is less compared to non MFIs and the level of indebtedness in non MFIs is almost 3 times of MFIs. At times, even when the indebtedness was high, the repayment capacity of MFIs was found to be more. Banks were found to be the major source of funding followed by Private money lenders. Non-institutional credit agencies still hold good across the sectors. NPAs existed to a great extent as loans are being used for non-fisheries activities like asset creation and social obligations. Vasantha and Manohar (2008) reported that microfinance programmes are presently being promoted as an important strategy for concurrently addressing both poverty alleviation and women's empowerment and micro financial firms must maintain efficiency levels to increase their scale of operations which surely will bring down the cost of financing and ultimately the benefits will be transferred to the poor people in terms of improving the standard of living and reasonable cost of borrowing. Another important inference which could be drawn from the study was that, as the repayment percentage of MFIs in the traditional sector was not up to the mark

compared to non-MFIs, there is an extreme necessity of strengthening the MFIs in the traditional sector because 91.3 per cent of the fisherfolk households come under the category of traditional sector in Indian marine fisheries census. It was observed that 37 per cent of active fishermen involved in mechanised fishing corners 66 per cent of catch and earnings and another 36 per cent of in motorised sector gets 27 per cent catch and earnings. The rest, 27 per cent involved in traditional sector gets only 7 per cent catch and proportionate earnings which is constituted by 91.3 per cent of the fisherfolk population of the country. (CMFRI, 2010) Therefore, concerted efforts in this direction to strengthen SHGs in the traditional sector are inevitable for better entrepreneurial capacity building through mobilized microfinance ventures. The success case studies elucidated on entrepreneurial capacity building, debt redemption and poverty alleviation through the ICT module developed as a part of this study in turn can serve as a practical manual for mobilizing MFIs in any key areas for the efficient ecosystem management and sustainable development in the Indian marine fisheries sector.

References

- Arciaga, Orlando, Fernando Gervacio, Robert Charles Capistraco and Cathrine Demesa. 2002. *Envisioning Life: Community Created Sustainable Livelihood Analysis and Development*. Philippines: Hribon Foundation & International Development Research Centre. 62 pp.
- Ashby Jacqui. 2003. Introduction: Uniting Science and Participation in the process of Innovation-Research for Development. In *Managing Natural Resources for Sustainable Livelihoods, Uniting Science and Participation*, IDRC, Ottawa, 252 pp.
- CBCRM Resource Centre. 2003. Sustainable Livelihoods Issues in CBCRM. In *Sustainable Livelihoods in Community Based Coastal Resource management, Vol 2*, San Antonio, Zambales, Philippines. p 32-34.
- CED. 2008. *Agricultural Credit and its Effects on Small Farmer Indebtedness*, Centre for Education and Documentation Mumbai, India, p 1-4.
- CMFRI. 2010. *Marine Fisheries Census 2010, Part 1*, India, Govt.of India, Ministry of Agriculture, Dept. of Animal Husbandry, Dairying & Fisheries and Central Marine Fisheries Research Institute, Indian Council of Agricultural Research, New Delhi. p 1-4.
- Garret, H.E. and Woodworth, R.S. 1969. *Statistics in Psychology and Education*, Vakils, Feffer and Simons Pvt. Ltd., Bombay. 329 pp.
- Jayaraman.R.2005. *Performance Analysis of Fisherwomen Self Help Groups*, Department of Fisheries Resources & Economics, Fisheries College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Thoothukkudi, Final Report submitted to National Bank for Agricultural and Rural Development. 63pp.
- Khan Shaheen Rafi, Ali Fahd and Tanveer Azka. 2005. *Compliance with International Standards in the Marine Fisheries Sector: A Supply Chain Analysis from Pakistan*, Sustainable Development Policy Institute (SDPI) and International Institute of Sustainable Development (IISD), 59 pp.
- Kudumbasree.2010. *News Letter of Kudumbasree*, the Govt. of Kerala initiative for microcredit, entrepreneurship and empowerment. p1-4.
- Mammoo. 2004. *Income, Indebtedness and Savings among fisherfolk of Orissa, India*, BOBP, Food and Agricultural Organization, United Nations& Swedish International Development Authority.
- Ministry of Finance.2007.*Report of the Expert Group on Agricultural Indebtedness*, Department of Economic Affairs, Ministry of Finance, Government of India, 124 pp.

- NSSO. 2003. *Land & Livestock holdings and Debt & Investment*, National Sample Survey Organisation, Ministry of Statistics and Programme Implementation. Government of India. p1-12.
- Sathiadhas, R. 2009. Inter-sectoral Disparity and Marginalization in Marine Fisheries in India. *Asian Fisheries Science*, 22:773-786.
- Tripathi, C. K. and Sharma, K.C. 2007. Impact of SHG-Bank Linkage Programme on financial behaviour of rural poor- evidence from Raebareli district in Uttar Pradesh, *Ind. J. Agri. Econ.* July, 2007. 298-311.
- Vasanthi,S. and Manohar, H.L. 2008. Challenges and opportunities of micro-finance for poor women's empowerment, *International J. South Asian Studies*, 1(2) 296-310.
- Vipinkumar.V.P. 2007. Dynamics of Women's Self Help Groups in Malabar Fisheries Sector: A Case Study, Abstract, In *Book of Abstracts of 8th Asian Fisheries Forum*, Kochi. p13.
- Vipinkumar, V.P. and Swathilekshmi, P.S. 2012. A study on impact of microfinance institutions on the coastal indebtedness in marine fisheries sector of Karnataka. *Global J. of Biol. Agri. & Health Sciences*. 1 (2) 18-27.
- Vipinkumar, V P and Shyam, S. Salim. 2013. Role of Microfinance on Coastal Indebtedness in Marine Fisheries Sector of Maharashtra, India. *Fishery Technology*, 50 (3). p251-257.
- Vipinkumar,V.P., Shyam.S.Salim, Narayanakumar,R, Sathiadhas,R, Madan,M.S, Ramachandran,C, Swathilekshmi, P.S and Johnson,B. 2013. *Coastal Rural Indebtedness and Impact of Microfinance in Marine Fisheries Sector*. Central Marine Fisheries Research Institute, Kochi (e book). 165pp.
- Yunus Muhammad.1999. *Banker to the Poor: Micro Lending and Battle Against World Poverty*, Pacific Affairs, New York. 121pp.
