



# Capacity Building of Officers for Market Led Fisheries Extension System

Suman Dey<sup>1</sup>, S N Ojha<sup>1\*</sup>, S S Dana<sup>2</sup>, M Krishnan<sup>3</sup> and Neha Wajahat Qureshi<sup>1</sup>

<sup>1</sup>Fisheries Economics, Extension and Statistics Division, ICAR-Central Institute of Fisheries Education, Mumbai 400 061 (Maharashtra)

<sup>2</sup>Department of Fishery Extension, Faculty of Fishery Sciences, West Bengal University of Animal and Fishery Sciences, Kolkata 700037 (West Bengal)

<sup>3</sup>HoD & Principal Scientist (Retd.), Education Management System (EMS) Division, ICAR- NAARM, Hyderabad – 500030

## ABSTRACT

The Department of Fisheries, West Bengal is involved in orienting towards the increase in farmers' income by increasing fish production. This effort becomes ineffective without the knowledge of marketing. Accordingly, this study was conducted in Nadia district, West Bengal to assess the capability of the officials in order to establish market-led extension approaches in the study area. In the present study, the training needs and knowledge levels of fisheries officers working in the state department of fisheries were assessed. The training need index was found to be highest for food safety and quality standards and it was least for institutional aspects in fish marketing. Knowledge level assessment of the officers revealed that the officers had comparatively better knowledge on the areas of alternative marketing methods, institutional aspects and supply chain aspects in fish marketing whereas lacks knowledge on the areas of infrastructure management, marketing information and food safety and quality aspects in fish marketing. In the present scenario, where the government is envisioning for establishing dynamic fish marketing system; capacity building and training of the officers are the two key aspects on which focus should be the foremost so that the officers can cope up with the pace of change and move towards developing a fisheries led market extension system.

**Key Words:** Assessment, Capacity building, Knowledge level, Market led extension, Training need.

## INTRODUCTION

The Department of Animal Husbandry, Dairying and Fisheries (DAHDF) has prepared a detailed Integrated National Fisheries Action Plan 2016 for producing 15.00 Mt of fish by 2019-20. However, there is a need to know about new technologies in various marketing aspects such as food storage, preservation, handling and packaging and market information system (Omoare *et al*, 2013). The existing marketing arrangements need to be upgraded and improvement in skills, knowledge and attitude of the officers working in the department of fisheries (DoF) were essential (Gummagolmath, 2011). Empowerment of farmers through market led extension is necessary to respond positively

to the changes in the food market for production system diversification, improved product quality and realization of value addition opportunities (Gummagolmath *et al*, 2013). Market-led-extension involves aspects on quality, consumer's preference, market intelligence, processing, value addition and other marketing information on regular basis (Kavad, 2015). As per UNDP, capacity building has to undergo though several steps. Among them, the first step is conducting training need assessment (TNA) in marketing. The significance of TNA in marketing is acknowledged as a critical starting point to identify capacity gaps of the functionaries, and then determining the nature or design of capacity building and training interventions.

\*Corresponding Author's Email: snojha@cife.edu.in

The extension functionaries are expected to play some functionary roles with regard to market led extension systems which include SWOT analysis of the market, organizing commodity-based farmers' interest groups and farm management capacity building, establishing marketing and agro-processing linkages, farmers exposure to market intelligence, direct marketing and guidance for quality decision about market (Shitu *et al*, 2013). The study was designed to identify the knowledge gaps and training needs of the officers working in the field of fisheries in the area of fish marketing.

### MATERIALS AND METHODS

The study area Nadia district was first among the fish producing district with production of 46,620.68 t at an average productivity of 5.31t/ha under Fish Farmer's Development Agency (FFDA) according to DoF report (2014-15). Purposive sampling

was conducted with the help of a structured questionnaire designed especially for the purpose. The information from 29 officers was collected to identify the major areas of marketing. The training needs were assessed for more than 30 different areas grouped into six broader categories based on the agriculture reforms made by Government of India in 2003 which provides different policies for orderly marketing of agricultural produce. The level of knowledge of officers regarding different aspects of fisheries marketing addressed through questionnaire was ascertained using the five-point Likert scale *i.e.*, if knowledge was very poor (1), poor (2), good (3), very good (4) and excellent (5). Training need assessment was done using 3-point Likert scale, *i.e.* 0, if training is not required; 1, if training is required and 2, if training is very much required. The information provided by the officers was analysed using descriptive statistics and training

**Table 1. Profile of the sample respondents.**

Sr.No.	Particular	Category	Frequency	Percentage
	Age (Yrs.)	21-40	13	44.83
		41-60	16	55.17
		>60	0	0
	Educational Qualification	Higher Secondary	2	6.9
		B.F.Sc/B.Sc	14	48.28
		M.F.Sc/ M.Sc	12	41.38
		PhD	1	3.45
	Designation	FFA(Fisheries Field Assistant)	3	10.34
		FEO(Fisheries extension Officer)	13	44.83
		AFO (Assistant Fishery Officer)	5	17.24
		ARO (Assistant Research Officers)	4	13.79
		DFO(District Fishery Officers)	4	13.79
	No. of trainings attended in fish marketing	Training attended	2	6.9
		Not attended training	27	93.1
	No. of trainings conducted in fish marketing	Conducted training	5	17.24
		Not conducted training	24	82.76

## Capacity Building of Officers

need index was worked out with the formula given by (Kanaga,1988).

$TNI = (\text{Total score obtained}/\text{maximum score obtainable}) \times 100$

## RESULTS AND DISCUSSION

### Profile of the sample respondents

The data (Table1) show that majority (55.17%) of the officers were found to be belonging in the middle age group (41-60 yrs.) followed by 44.83 per cent belonging to the young age group (21-40 yrs.). It was observed that almost half (48.28%) of them were degree holders followed by 41.38 per cent having masters' degree. It was also noticed that only 3.45 per cent of the sample respondents had Ph.D. The findings of the study were in line with the study of Gummagolmath *et al* (2013) revealing that most of the officers had mean age of 43.23 yrs. ranging between 23 and 58 yrs. and attained higher level of education *i.e.*, post-graduation or doctorate. Out of 29 respondents, it was found that only 2 (6.9%) officers attended training related to marketing and 27 (93.1%) of them did not undergo any such type of training. It can be observed from the Table that only 17.24 per cent of the officers had conducted trainings on marketing aspects whereas 82.76 per cent was found to be conducting no such training programmes. Hence, this type of training was needed in the blocks along with the skill development of the officers.

### Training need assessment regarding fish marketing

For the purpose of identifying training needs, six major areas such as alternative marketing methods, institutions and policies in fish marketing, supply chain management, infrastructure management and food safety and quality standards were identified. The area specific training need index was worked out based on the responses received from the officers working in the fisheries department. The training need index was found to be highest for food safety and quality standards with 79.31 per cent followed

by alternative marketing methods (68.53%) and least for institutional aspects (62.49%) in fish marketing. The extent of overall training need of the officers was 68.14 per cent. Similar results were obtained by Gummagolmath *et al* (2013) with overall training need with 72.20 percent and Patil and Kokate(2011) depicted that training need index of subject matter specialists of Krishi Vigyan Kendra was 82.08 percent for the area of agricultural marketing and export.

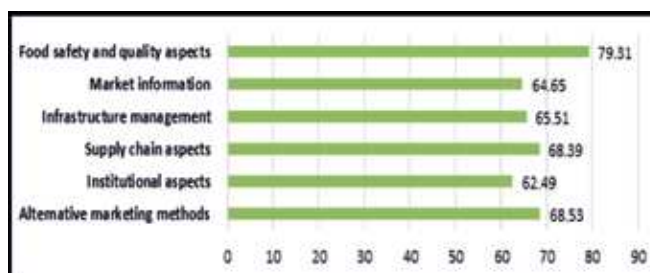


Fig.1 Area specific training need index of the fisheries officers of Nadia district.

### Training needs of officers on alternative marketing methods in fish marketing

The values (Table 2) indicated that the training need index was found to be highest with respect to private markets (72.41%) followed by direct marketing (68.96%), farmers market (67.24%) and contract farming (65.51%). The areas like private market, farmers market were the emerging areas in the days to come, so training in these areas was felt to be need of the hour. The issues covered in the study were very dynamic as a result needs prior upgradation with it.

### Training needs of officers on institutional aspects in fish marketing

The training need index with respect to institutional aspects was found to be highest in case of schemes in fish marketing (67.24%) followed by world trade organization (63.79%), public private partnership (60.34%) and essential commodities act (58.62%). The apparent high scores coupled with larger proportion of respondents requiring training revealed that there was an urgent need to sensitize the officers on these issues by developing appropriate training module.

**Table2. Training need assessment on various areas of fish marketing.**

Sr. No.	Areas of training need	Not required		Required		Very much required		Index	Rank
		No.	%	No.	%	No.	%		
<b>A.</b>	<b>Alternative marketing methods in Fish marketing</b>								
1.	Private markets	1	3.45	14	48.28	14	48.28	72.41	1
2.	Direct marketing	1	3.45	16	55.17	12	41.38	68.96	2
3.	Farmers market	2	6.90	15	51.72	12	41.38	67.24	3
4.	Contract farming	0	0	20	68.97	9	31.03	65.51	4
<b>B.</b>	<b>Institutional aspects</b>								
5.	Schemes in fish marketing	0	0	19	65.52	10	34.48	67.24	1
6.	World trade organization	2	6.9	17	58.62	10	34.48	63.79	2
7.	Public private partnership	0	0	23	79.31	6	20.69	60.34	3
8.	Essential commodities act	6	20.69	12	41.38	11	37.93	58.62	4
<b>C.</b>	<b>Supply chain aspects</b>								
9.	Postharvest management	3	10.34	7	24.14	19	65.52	77.58	1
10.	Packaging	0	0	14	48.28	15	51.72	75.86	2
11.	Storage	3	10.34	11	37.93	15	51.72	70.68	3
12.	Transportation	4	13.79	12	41.38	13	44.83	65.51	4
13.	Grading and standardization	0	0	24	82.76	5	17.24	58.62	5
<b>D.</b>	<b>Infrastructure management</b>								
14.	Infrastructural designs	1	3.45	16	55.17	12	41.38	68.96	1
15.	Electronic auction system	3	10.34	13	44.83	13	44.83	67.24	2
16.	Special commodity markets	3	10.34	15	51.72	11	37.93	63.79	3
17.	Modern terminal market	2	6.9	18	62.07	9	31.03	62.06	4
<b>E.</b>	<b>Market information</b>								
18.	Market information system	2	6.9	15	51.72	12	41.38	67.24	1
19.	Market led extension	3	10.34	14	48.28	12	41.38	65.51	2
20.	Market research	5	17.24	11	37.93	13	44.83	63.79	3
21.	Export procedures	3	10.34	16	55.17	10	34.48	62.06	4

## Capacity Building of Officers

F.	Food Safety and Quality Aspects								
22.	Food safety and standards	1	3.45	12	41.38	16	55.17	82.75	1
23.	Good marketing practices	1	3.45	10	34.48	18	62.07	79.31	2
24.	Quality certification	1	3.45	12	41.38	16	55.17	75.86	3

### Training need of officers on supply chain aspects in fish marketing

The results revealed that training need on post-harvest management ranked first with high score of 77.58 per cent followed by packaging (75.86%) and storage (70.68%). Most of the respondents opined that training was required on these issues. Hence, the capacity building programmes were very much required for personnel working in the extension department as they frequently encounter queries by the actors in the supply chain.

### Training need of officers on infrastructural management in fish marketing

The data depicted that training requirements of the officers on modern market infrastructure design is the highest (68.96%). The requirements for training on modern market infrastructure was obvious as most of the states have still to put in place various modern market infrastructure like electronic weighing scale, cold storages and electronic auction machines.

### Training need of officers on market information in fish marketing

The timely availability of right information and its proper utilization is as critical as the availability of major inputs required for farming until produce reaches consumer. Therefore, extension agents who were working in departments should be updated on market information. The training needs was highest in case of market information system (67.24%) followed by market led extension (65.51%), market research (63.79%) and export procedures (62.06%).

### Training need of officers on food safety and quality aspects in fish marketing

The results showed that training index of food safety and standards was the highest (82.75%)

followed by good marketing practices (79.31%) and quality certification (75.86%). The officers working closely with farmers at grass-root level need more information on practical aspects than institutional aspects.

### Knowledge level assessment of the officers

The results revealed that the officers had comparatively better knowledge on the areas of alternative marketing methods, institutional aspects and supply chain aspects in fish marketing whereas lacks knowledge on the areas of infrastructure management, marketing information and food safety & quality aspects in fish marketing which are the key areas in which knowledge is needed to establish a dynamic fisheries led marketing extension system.

### Relationship between training need and level of knowledge of officers

It was revealed (Fig. 2) that training need index is almost a mirror image of the knowledge score, which indicated the inverse relationship between these two scores *i.e.*, with the increase in knowledge level, the need for training will come down and vice-versa. Similar findings were also recorded in the study conducted by Gummagolmath *et al* (2013) on assessment of training needs and knowledge level of officers in agriculture marketing.

## CONCLUSION

The capacity building of the fisheries officers was the urgent need of the hour in order to cope up with the emerging needs and dynamic changes taking place every day in the fisheries sector. The findings of the study revealed that the training need index was on higher side for majority of the issues addressed in the study. It was also apparent

**Table 3. Knowledge level assessment of the officers.**

Areas of Knowledge level assessment	Total score obtained	Mean Score	Mean Rank
Alternative marketing methods in fish marketing	82.75	2.85	I
Institutional aspects in fish marketing	70.75	2.43	II
Supply chain aspects in fish marketing	70.6	2.43	III
Food safety and quality aspects in fish marketing	65.33	2.25	IV
Market information in fish marketing	58.5	2.01	V
Infrastructure management in fish marketing	57.5	1.98	VI

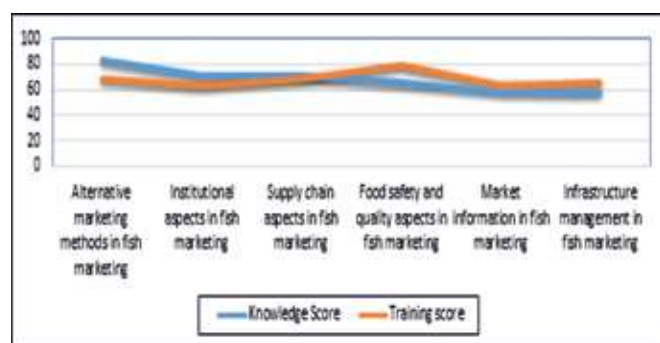


Fig 2. Relationship between training need and knowledge score of fisheries officers of Nadia district

from the study that majority of the officers were eager to undergo training in the various areas of fish marketing that are unknown to them. It is very much required to assess the training needs of the officers at regular intervals and accordingly the training programmes should be built so that they are benefitted full-fledgedly. These types of approaches will enlighten the pathway for establishment of market led extension approaches in the sector giving an opportunity to all the stakeholders including farmers to access better market opportunities and will result in an effective supply chain management.

### ACKNOWLEDGEMENT

The authors are grateful to the officials of the Department of Fisheries, West Bengal who extended their hands of cooperation to make the study successful. The authors are thankful to the Director, ICAR-CIFE, Mumbai for their continuous support in undertaking the study. The fellowship provided by ICAR towards the conduct of this study is also

acknowledged.

### REFERENCES

- DAHDF (2016-17). Annual Report. Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture & Farmers Welfare Government of India.
- Department of Fisheries (DoF) (2014-15). Handbook of Fisheries Statistics, Directorate of Fisheries, Govt. of W.B.
- Gummagolmath KC (2011). Training Need Assessment of Officers of State Agricultural Marketing Board and Directorate of Agricultural Marketing. Research report (2011-12), NIAM, Jaipur.
- Gummagolmath KC, Sharma P and Shalendra (2013). Assessment of Training Needs and Knowledge Level of Officers in Agricultural Marketing. *Indian J of Agricultural Mar*27(2).
- Kanaga KS (1988). *Training needs in agriculture of 'irulas' and 'attapady'*. Unpublished M.Sc. Thesis KAU, College of Agriculture, Vellayani.
- Kavad SD (2015). *Strategic analysis of market-led-extension activities of APMCs of South Gujarat*. Doctoral dissertation, Extension Education Dept., Nm College of Agriculture, Navsari Agricultural University, Navsari.
- Omoare A M, Fakoya EO, Abiona B G and Oyediran WO (2013). Fish Marketing: A Panacea towards Sustainable Agriculture in Ogun State, Nigeria. *Int J AgrBiolEng*7(7):262-266.
- Patil SS and Kokate KD (2011). Training need assessment of subject matter specialists of Krishi Vigyan Kendras. *Indian ResJ Ext Edu*11(1):18-22.
- Shitu GA, Sakia R, Meti SK and Maraddi GN (2013). Market led extension: prospects and challenges for agricultural sustainability in the 21st Century (No. 197025). Agecon Search.

Received on 10/06/2020

Accepted on 15/08/2020