Problem Analyses for Planning Fisheries Extension Programs: Tools and Methods

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ABSTRACT

The objectives of this study were to: 1) identity the basic characteristics of participants, 2) present tools and methods of problem analyses discussed by participants, 3) indicate the perception of participants on the usefulness and the implementation of tools and methods of problem analyses, and 4) explain why participants decided to implement tools and methods of problem analyses.

Population was twenty-six trainees participating in the International Training Course in Coastal Fisheries Management and Extension Methodology organized by the Southeast Asian Fisheries Development Center (SEAFDEC) during August 22 to September 21, 2006.

Findings were as follows: 1) Most participants were fisheries officers who directly involved with the program planning. They had an average of 7.44 years' working experiences. 2) Tools and methods presented by participants illustrated methods of problem analyses upon the Knowledge, Attitude, and Practice (KAP) survey. Decline of fishery resources was a key problem discussed and analyzed by participants.
3) Participants expressed the positive perception on the usefulness and the implementation of the KAP survey, 4) They gave an explanation on implementing KAP survey because of its importance, conflict resolution, and benefits of fishermen livelihood.

Key words: problem analysis, fisheries, and extension program

INTRODUCTION

It is widely recognized that small – scale and coastal fisheries are crucial in ensuring food security for people in the Southeast Asian region. They are important sources of livelihood for rural and coastal communities. Fish stocks and other coastal resources, however, are under pressure caused by over – fishing, illegal fishing, and lost of breeding grounds. Fast – growing of population, economic and industrial development, urban and tourism expansion are among other factors that conflict in managing the coastal areas.

The Southeast Asian Fisheries Development Center Training Department (SEAFDEC – TD) has initiated an opportunity to work with its member countries in creating and developing its potentiality on the integrated coastal management approaches. The International Training Course in Coastal Fisheries Management and Extension Methodology, therefore, has organized for fisheries managers and extension officials to strengthen their practices and give them

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with tools and methods to enable them to analyze problems and be able to plan fisheries extension programs.

Researchers who were the instructors of this training course have familiarized twenty-six participants from thirteen countries with the principles and concepts of extension program planning and evaluation. We also provided a workshop on how to analyze problems for planning fisheries extension programs to ensure the sustainable development and management of coastal areas.

To fulfill the analytical thinking and integrated methods of problem analyses, this research was an attempt to find answers to the following questions.

1) What were the basic characteristics of the participants?

2) What were the key problems of small-scale fishermen and how to analyze them by employing the problem analysis methods?

3) At what level did participants perceive the usefulness and the implementation of problem analysis methods in their job responsibilities and why?

Literature reviews

The sources of problem analyses are derived from the following related literatures.

Problem analyses for program planning

Planning is defined as a process of analyzing problems, formulating objectives and goals to solve problems, identifying methods to accomplish goals, and measuring processes towards the goal achievements (Middleton and Hsu, 1975). The successful program planning must outline the critical issues of the target audiences, and specify goals and actions needed to operate. The program planning, however, has to be flexible and ready for the necessary modification to improve and fulfill the needs of target groups.

To provide tools and methods for problem analyses, a KAP survey proposed by Adhikarya and Posementeir (1987), and Adhikarya (1994) is employed. A KAP survey is a procedure for conducting the problem and need assessment of target beneficiaries' knowledge, attitudes, and practices (KAP) on the specific and critical elements of a recommended technology. It is the problem – solving oriented and operates at a micro level. It also reflects the important methods by employing the qualitative techniques such as interviews, focus group discussion, and observation for the explanation of the negative attitudes and refusal of the recommended technology.

Results of a KAP survey will be appropriate to analyze the reasons why target groups fail to adopt the recommended technology. At the same time, it helps to purpose the possible solutions to correct the misbehavior of target audiences. It is, therefore, essential to identify the correct knowledge, attitudes, and skills to solve the critical problems facing target clientele.

Tools and methods of problem analyses for planning fisheries extension program

The tools and methods are modified by the KAP survey of Adhikarya (1994). They include the following steps.

a) Key problems of the fishermen and their families.

b) Technical causes of the key problems.

c) Groups who are responsible for the technical causes of the key problems.

d) Current behavior of responsible groups that results in the technical causes of the key problems.

e) Knowledge, attitudes, and skills that are required to correct the current behavior of the responsible groups.

f) Other factors to correct the current behavior of the responsible groups.

Objectives of the study

1. To identify the basic characteristics of the participants.

2. To present the tools and methods of problem analyses discussed by the participants.

3. To indicate the perception of participants on the level of usefulness and the level of implementation of problem analysis methods in their job responsibilities.

4. To seek for an explanation why the participants decided to implement the tools and methods of problem analyses.

Operational definition

"Tools and methods of problem analyses" referred to categories in analyzing problems as follows:

a) Key problems

b) Technical causes of "a"

c) Groups responsible for "b"

d) Current behavior of "c" which results in "b"

e) Knowledge, attitudes, and skills requires to correct "d"

f) Other factors to correct "d"

"Participants" referred to twenty – six trainees attending the International Training Course on Coastal Fisheries Management and Extension Methodology during August 22 – September 21, 2006 at Southeast Asian Fisheries Development Center – Training Department (SEAFDEC – TD)

"Level of usefulness" referred to the opinion of participants upon the suitability of the tools and methods of problem analyses in their job responsibilities. It was categorized into 5 levels as follows:

Least usefulness	=	1 score
Less usefulness	=	2 scores
Moderate usefulness	=	3 scores
More usefulness	=	4 scores
Most usefulness	=	5 scores

"Level of implementation" referred to opinion of participants upon the achievement of the tools and methods of problem analyses in their job responsibilities. It was classified into 5 levels as follows:

Least implementation	=	1 score
Less implementation	=	2 scores
Moderate implementation	=	3 scores
More implementation	=	4 scores
Most implementation	=	5 scores

Steps of research study

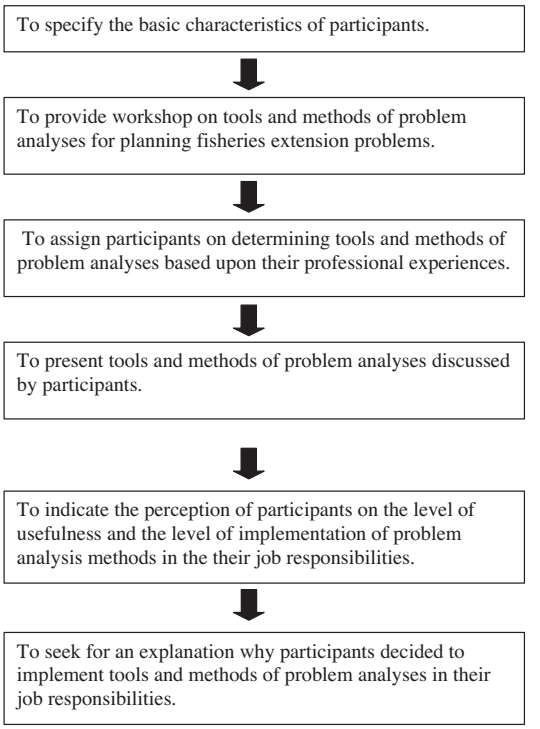

Figure 1 Steps of research study.

METHODOLOGY

Population was twenty-six participants from thirteen countries.

Instruments consisted of the questionnaires asking the basic characteristics of participants and their perception on the usefulness and implementation of the problem analysis methods.

Data analyses Descriptive analyses were utilized to describe basic characteristics and perception of participants on the level of usefulness and level of implementation. The focus group discussion was applied to deliberate the methods of problem analyses and explain the reasons why participants decided to practice these methods in their work.

Mean scores and interpretation

Mean scores		Interpretation
1.00 – 1.80	=	least usefulness/ implementation
1.81 – 2.60	=	less usefulness/ implementation
2.61 – 3.40	=	moderate usefulness/ implementation
3.41 – 4.20	=	more usefulness/ implementation
4.21 – 5.00	=	most usefulness/ implementation

RESULTS

Basic characteristics of participants

Work position. There were 26 participants in this training program. Their working positions were ranging from the most to the least occurrence as follows:

8 fisheries officers, 4 fisheries inspectors, 3 policy and planning officers, 2 deputy directors, and 2 fisheries biologists.

The rests were an administrator, an aquaculture technician , and head of fisheries marine investigation, head of livestock and fishery section, head of sub – program division, a national consultant, and a trainee.

Number of years working at present position. Within the present position they processed, the average years of working were 7.44 years. The maximum were 28 years and the minimum was 3 months. Most of them have been working at their present position between 3 months to 9 years.

Number of years working at present office. Upon a question of how long participants have been working at their present office. Most of them replied between 3 months to 9 years. The average years were 4.75. The maximum were 22 years and the minimum was 3 months.

Work position involved with planning program/project. 21 participants stated that they have been directly involved with the program/project planning. Only 5 of them stated differently.

Work position in program/project involvement. When asked 21 participants who

Table 1 Work position.

Position	Number	Percent
Fisheries officers		
- Administrator	1	3.8
- Aquaculture technician	1	3.8
- Deputy director	2	7.8
- Fisheries biologist	2	7.8
- Fisheries inspector	4	15.4
- Fisheries officer	8	30.8
- Head of fisheries marine investigation	1	3.8
- Head of livestock and fishery section	1	3.8
Others		
- Head of sub – program division	1	3.8
- National consultant	1	3.8
- Policy and planning officer/staff of planning division/project officer	3	11.6
- Trainee	1	3.8
Total	26	100.0

indicated their involvement in the fisheries extension program planning, they specified 44 positions in program/project involvement at the following frequency. Those were 14 program implementations, 12 program evaluators, 10 program advisors, and 6 program directors.

Perception of participants. 26 participants expressed their perception. The average scores illustrated the positive perception since they indicated the more usefulness and more implementation of problem analysis methods in their job responsibilities ($\bar{x}$ = 4.04 and 3.70).

Table 2 Number of years working at present position.

Number of years	Number	Percent
3 months - 9 years	19	73.0
10 - 19 years	4	15.4
20 - 28 years	3	11.6
Total	26	100.0

Max = 28 years, Min = 3 months, $\bar{x}$ = 7.44 years

Table 3 Number of years working at present office.

Number of years	Number	Percent
3 months - 9 years	23	88.6
10 - 19 years	2	7.6
20 - 22 years	1	3.8

Max = 22 years, Min = 3 months, $\bar{x}$ = 4.75 years

Table 4 Work position directly involve with planning program/project.

Directly involved with planning program/project	Number	Percent
Yes	21	80.8
No	5	19.2
Total	26	100.0

Table 5 Work position in program/project involvement.

N = 44

Work position in program/project involvement	Number	Percent
Program advisor	10	22.7
Program director	6	13.6
Program implementation	14	31.8
Program evaluator	12	27.3
Other	2	4.6
Total	44	100.0

Table 6 Tools and methods of problem analyses discussed and presented by participants.

(a) Key problems	(b) Technical causes of "a"	(c) Group responsible for "b"	(d) Current behavior of "c" which results in "b"	(e) Attitude, knowledge, and skills required to correct "d"	(f) Other factors to correct "d"

Decline of fishery resources	• Over fishing
	• Illegal fishing
	• Lost breeding grounds
		• Small scale fishermen
		• Commercial fishermen
			• Increase fishing efforts
			• Use destructive fishing gears
			• Commercial use of mangroves
				• Increase awareness of small scale and commercial fishermen on
				  • Importance of mangrove community
				  • Type of harmful fishing gears for non–selective fishing
				• Provide knowledge on responsible fisheries
				• Promote coastal resource rehabilitation and conservation
				• Train how to use correct methods to catch fishes
				• Close fishing areas in spawning seasons
					• Introduce licensing system for boat fishing gears
					• Ban of cutting and replant mangroves
					• Declare protected fishing areas
					• Increase value added of fish products
					• Impose taxes upon type of fishing gears

	• Damaged coral reefs	• Fishermen • Divers • Industries along coastal fishery areas	• Anchor into coral • Use destructive fishing gears • Coral mining • Drain oil into the sea • Drain chemicals from factories into the sea	• Promote awareness programs for fishermen, divers, and industrial people living along coastal fishery lines • Introduce alternative livelihood programs to	• Protect coral reefs from ultraviolet rays by planting mangroves along coastal fishery areas • Introduce proper wastage systems

Table 6 (Cont'd)

(a) Key problems	(b) Technical causes of "a"	(c) Group responsible for "b"	(d) Current behavior of "c" which results in "b"	(e) Attitude, knowledge, and skills required to correct "d"	(f) Other factors to correct "d"
			• Dump garbage and waste water from industrial wise into the sea	sustain and wisely use mangroves • Correct wastage methods along coastal fishery lines.	• Law enforcement for coral reef protection
Shrimp diseases in ponds	• Bacterial diseases • Virus diseases • Bad water quality • Growth of pests and parasites	• Aquaculture farmers	• Lack of appropriate knowledge on shrimp diseases • Bad fry quality • Poor culture practices • Lack of technology and techniques	• Training programs for diseases, pests, and parasite control • Implementing good aquaculture practices • Correct handling techniques • Correct shrimp processing techniques	• Providing how to specific pathogen free (SPF) to aquaculture farmers • Introducing record keeping and traceability to ensure food safety and food security • Providing free fry checking

Table 7 Perception on level of usefulness and level of implementation of problem analyses.

N = 26

Level of usefulness						Level of implementation					
Most	More	Moderate	Less	Least	$\bar{x}$	Most	More	Moderate	Less	Least	$\bar{x}$
8	11	7	-	-	4.04	7	6	11	2	-	3.70

Explanation why implementing problem analysis methods.

1. Importance of problem analysis methods.

Participants from the Philippines stated that problem analysis was very important in the extension program planning process because with this method they could see all the factors affecting and causing a specific problem and they could come up with ways and techniques to solve them. It was also necessary to work with the responsible fishery extension workers since they knew what would happen and what would be the outcomes of the programs.

2. Conflict resolution among fishermen, stakeholders, and communities.

Problem analysis methods would look into the conflict facing fishermen and their communities. It would also guide the ways to solve the problems and possibly drove the enforcement activities or subsidized programs. The participatory approaches among stakeholders and the communities would take part in the problem solving.

3. Improvement of fishermen livelihood.

One good example from Indonesian participants stated that the techniques of problem analysis methods would provide an opportunity to seek for more information and perhaps an appropriate technology to cope with the problem. The ultimate outcomes of the problem analysis were the survival of fishermen. The multilateral cooperation would take place for the benefits of fishermen livelihood.

DISCUSSIONS

Research findings indicated that 26 participants involved with fisheries or extension one way or the other. Most of them were fisheries managers and extension administrators who have met the conditions of participants in this training program.

Participants have been working at their present positions for an average of 8 years that were appropriate enough to comprehend and analyze problems facing the fisheries extension work under their responsibilities.

For those who were involved with program planning, their involvement was in various levels. They were directors, administrators, and front line workers that in turn would be suitable to discuss and share their professional experiences. They also would be able to see the complete cycle of the problems and how to handle them at the policy, administration, and front line levels.

Participants agreed that a problem analysis was a practical tool and method and would be implemented in their job responsibilities. It was, however, under the conditions that multilateral cooperation among stakeholders should exist and prolong.

Decline of fishery resources was an indicator to be unsustainable fisheries coastal management. This problem would increase as long as the attitude, knowledge, and skills of responsible groups remained the same. The problem analysis methods were useful tools to identify ways and means to handle the problems.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Research findings have shown that 21 out of 26 participants have been directly involved with program or project planning. They were program

implementations, program evaluators, program advisors, and program directors. They were also revealed positive perception on the usefulness and implementation of the tools and methods of problem analyses in planning fisheries extension programs. Participants presented the crucial problems facing small-scale fishermen and employing the KAP survey purposed by Adhikarya to handle those problems. Participants gave an explanation on the implementation of problem analysis methods because of its importance, its beneficiaries in conflict resolution, and its improvement of fishermen livelihood.

Recommendations

Based upon the findings. The recommendations were as follows:

1. The decline of fishery resources was the crucial problems encountering small scale and commercial fishermen in this region. To solve these problems required the domestic and international cooperation. Responsible agencies and stakeholders should come up with plans and programs to immediately tackle these problems.

2. Attitude, knowledge, and skills required to correct misbehavior of responsible groups were important elements in problem analysis. However, the process of analyzing problems such as technical assistance, self – reliance, and participatory approach should be integrated. These approaches would bring responsible groups closer and increase the sense of responsibilities among them.

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