ENHANCING INDONESIAN FISH PRODUCTION AND COMPETITIVENESS IN INTERNATIONAL MARKET

ENHANCING INDONESIAN FISH PRODUCTION AND COMPETITIVENESS IN INTERNATIONAL MARKET
based on papers presented at the International Seminar on Indonesian Fisheries Development 2010 at Hasanudin University, Makassar, 22 November 2010

Editors :
Dr. Hendra Yusran Siry
Dr. Asmi Citra Malina
Dr. Agus Heri Purnomo
Ir. Pujoyuwono M.Sc
Dr. Luky Adrianto
Dr. Sutinah Made
Dr. Harsuko Riniwati

Copy-editor :
Nurhendra

Joint Publication by:

Research Center for Marine and Fisheries Socio Economics
c/o Jl. K.S Tubun - Petamburan VI Jakarta Pusat
Phone : (021) 536 50162 - 53650475 - Fax : (021) 536 50159
E-mail : pt.sosek@gmail.com
web : www.bbse.kip.go.id

Indonesian Marine and Fisheries Socio-Economics Research Network
c/o Jl. K.S Tubun - Petamburan VI Jakarta Pusat
Phone : (021) 536 50162 - 53650475 - Fax : (021) 536 50159
E-mail : pt.sosek@gmail.com
web : http://imfisern.wordpress.com/

Faculty of Fisheries and Marine Science, Hasanuddin University
JL. Perintis Kemerdekaan KM. 10, Kampus Tanjalanrea, Makasar 90245, Indonesia
Web : www.ffkip.unhas.ac.id

Citation :

Foto Cover : google
# TABLE OF CONTENTS

## PREFACE

| Chairman of Agency for Marine and Fisheries Research and Development, Ministry of Marine Affairs and Fisheries | viii |
| Director of Research Center for Marine and Fisheries Socio-economics (RCMFSE) | ix |

## NO | PAGE

1. Toward More Competitive Of Indonesian Fisheries Production In International Market  
   *by: Hendra Yusran Sire, Asmi Citra Malino, Pujayuwono, Agus Heri Purnomo, Luki Adrianto and Sutinah Made*  
   | 1 |

2. Mariculture Development in Indonesia: Prospects and Constraints  
   *by: Michael A. Rimmer*  
   | 7 |

3. "Indonesian Shrimp Incorporated" Shrimp Producer as World Number 1  
   *by: Andi Tamsil and Iwan Sutanto*  
   | 12 |

4. Adapting Extension Approaches to Aquaculture Environments in Indonesia: Lessons for Those Working in Fisheries  
   *by: Joanne Millar, Mardiana E Fachry, Ageng S Herianto, Richard Callinan and Mike Rimmer*  
   | 21 |

## SOCIO-ECONOMICS

5. Efficiency and Economic Scale of Shrimp (Penaeus monodon) Culture Technology in South of Sulawesi  
   *by: Ali Musa Pasaribu and Aris Baso*  
   | 31 |

6. Evaluation of Surplus Production Model for the Estimation of the Maximum Sustainable Yield to Support Management of Lemuru Fishery in the Bali Strait  
   *by: Georgina M. Tinungki*  
   | 39 |
7 Financial Analysis of Simple Technology Fisheries Processing on Panjang Baru Village, Pekalongan City, Province of Central Java
by: Freshty Yulita Arthathani and Rismutia Hayu Deswati

8 Proscpects and Trade Potential of Marine Ornamentals in Indonesia
by: Mauli Kasmi and Sutinah Made

9 Allocative Efficiency of Milkfish Culture on Ujung Pancakab District, Gresik City, Province of East Java
by: Rismutia Hayu Deswati and Freshty Yulita Arthathani

10 Tuna Handline Fishermen Profit Sharing System in Batu Lubang Bitung City North Sulawesi Province
by: Rizki Aprilian Wijaya, Budi Wardono and Risiky Muhartono

11 Fish Consumption Analysis of Primitive Community in North Mamuju District, West Sulawesi Province
by: Rohmadonih, M. Saleh S. Ali, Sitti Bulkius and Akhsan

12 Sustainability Status of Minapolitan Region Development in the District of Kotawaringin Barat
by: Siti Hajar Suryawati and Agus Heri Purnomo

13 Seaweed Market Share Analysis (Euchema cottonii) in the Village District Mallari Awangpone in Bone District
by: Sri Suro Adhawati and Sitti Fakhriyiah

14 Analysis of Shrimp Price Linkages between the World, Import-Export and Domestic Market
by: Tajarin

15 The Analysis of Accessibilities and Marketing Path of Aquaculture Centres in Gowa District using Spatial Approach
by: Tikkyrino Kurniawan, Hikmah and Tenmy Apriliani

16 Assessment of Macro-Micro Link for Fisheries Development
by: Zuzy Anna

17 The Income Analysis of Drift Gill Net Fishermen in Matassar Strait
by: Aris Baso

18 Opportunities and Challenges of ASEAN-China Free Trade Agreement (ACFTA) to Marine and Fisheries Sector in Indonesia
by: Maharani Yulist, Subhecanis Saptanta, Estu Sri Luhur and Armen Zulham
19 The Role of Group Communication in the Application of BMP in South Sulawesi
   by: Mardiya F Fachry

20 Empowerment in Supporting of the using Potential Coastal Fisheries by Microfinance Economic Institutions
   (Case Study at the Prigi Beach, Trenggalek, East Java)
   by: Agus Tjahjono and Wahyu Handayani

21 Poverty and Responsibility of Women in Cipatuguran Fisherman Village, Sukabumi Regency, West Java Province
   by: Christina Yuliaty, Hikmah and Istiana

22 The Strategic Leadership of Learning Organization Approach in the Resources Sustainable Management of Marine and Fisheries
   by: Badu Ahmad

23 The Effectiveness of Women Worker on Processing Effort Swimming Crab (Portunus spp) at Salemo Island, Mattiro Bombang Village, Liukang Tuppabirling Subdistrict, Pangkep District, South Sulawesi Province
   by: Amluddin, Diesy Hariza and Sri Suro Adhawati

24 Prigi Bay: Past, Present and Future of the Management Plan
   by: Edi Susilo, Pudji Purwanti and Wahyu Handayani

25 Comparative Study of Seaweed Farmers’ Revenue on the Embankment (Gracilaria sp.) and at Sea (cottoni Eucheuma Sp.)
   by: Saadah

26 Distribution of Age, Education, Jobs, and Asset of Fishermen Family Life at Aek Habi Village, Sibolga Town, North Sumatera Province
   by: Sastrowidjaja

27 Adapting the Concept of Agropolitan to the Development of Minapolitan (Based on A Case Study of Kotawaringin Barat District)
   by: Siti Hajar Suryawati and Agus Heri Purnomo

28 The Role of Natural Resources and Environmental Accounting in the Measurement of Marine Sector Contribution to the Regional and National Gross Domestic Product: Urgency, Conception and Methodology
   by: Tajerin and Risna Yusuf

197

210

220

231

245

253

259

264

283

297
THE ROLE OF GROUP COMMUNICATION IN THE APPLICATION OF BMP IN SOUTH SULAWESI

Mardiana E. Fachry
Hasanuddin University
Jl. Perintis Kemerdekaan KM. 10, Kampus Tamalanrea, Makassar 90245, Indonesia
Email: Mardiana_Ethrawaty@yahoo.com

ABSTRACT

This study aims to determine the role of communication in groups and the application of best management practices (BMP) in Barru and Pinrang districts, which were purposively selected as these areas were pilot implementation areas. This study was conducted at Sepakat and Madello Group with members of 60 people, consist of 30 people of Barru “Sepakat” fish farmers group members and members of “Madello” farmer group in Pinrang. Results of this study showed that the communication role in the effort to implement the BMP. Form of communication between groups in Barru chairman and its members are looser and spread evenly. Form of group communication in Pinrang on the chairman as a source of information.

Keywords: best-management practices (BMP), form of group communication,
BACKGROUND

Efforts to increase shrimp productivity in Sulawesi Selatan continue to be a focus. The trauma on shrimp disease that was suffered by fish farmer nearly a decade ago is one of the recommended way toward the fish farmer to improve their culture method in avoiding shrimp disease. There are 8 main criteria of BMP namely 1) Pond Layout, 2) Pond walls, 3) Preparation and enlargement, 4) Preparation and Selection of seeds, 5) Water management pond, 6) Feed management, 7) Observation growth and signs of disease attacks (WSSV), 8) Harvest handling.

Basically, these criteria have been implemented by the fish farmer; however, implementation of appropriate standard could not be done due to various reasons such as limited of pond area, labor and cost.

Through the role of the group, it is expected that implementation of BMP can be more appropriately adopted by group members, therefore this research try to look at the role of communication and forms of group communication that will support the implementation of BMPs.

Problem study

1. How is the role of group in supporting member participation on shrimp farmers?
2. What are the forms of group communication in Barru and Pinrang in implementing the BMP to its members?

Objectives:

1. To determine the role of the group in supporting the participation of members in implementing BMPs
2. To find out the form of group communication in supporting the implementation of BMPs

METHODS

Location

A preliminary study was conducted in two locations, Madello village in the district of Balusu in Barru regency and Data village in the district of Pekkabata in Pinrang regency, the place where Based Management Program (BMP) was implemented. The chosen by the ACIAR program.

The sample

Constituted 30 respondents of the total pond-farmer households which randomly selected from each location. Therefore, there are 60 respondents from two locations.
Primary data were collected by interviewing respondents and observing filed conditions on the basis of the following criteria: demographic structures.

Secondary data were collected from some published literatures and research reports from various academic, research and government institutions. The data were supported by using qualitative and descriptive explanation.

Focused Group Discussion (FGD) was done which aimed to evaluate respondent answers in the questionnaires and to find out the basic problems in the role of group communication to implementing the BMP.

METHODOLOGY

Geographic:

Barru Management Practice (BMP) system was carried out in Madello Village, Barru Regency, Barru Regency and Data Village, Pekabata District, Pinrang Regency. Madello Village has 345.69 ha. brackishwater ponds which is the largest pond area in Barru Regency. While Data has 1.121 ha. Population in Balusu Distric is 18,202 (BPS of Pinrang Judul, 2007), consist of 8,677 men dan 9,525 women which is separated in 14 villages. Population in Pekabata District is 45,199 (BPS of Pinrang regency, 2007), consist of 22,754 men and 23,445 women which is separated in 14 villages. The area of brackishwater ponds on the BMP location (Balusu and Pekabata) is illustrated in the table below.

<table>
<thead>
<tr>
<th>Location</th>
<th>Brackishwater Pond Area (ha)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madello Village</td>
<td>345.69</td>
<td>23.6</td>
</tr>
<tr>
<td>Data Village</td>
<td>1.121</td>
<td>76.4</td>
</tr>
<tr>
<td>Total</td>
<td>1,466.59</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: the "BPS" data of Barru and Pinrang regency, the year of 2007.

It shows that Barru and Pinrang regency is suitable for shrimp aquaculture in terms of the number of brackishwater ponds. It also indicates that the selected villages for implementing the BMP program is undeniable.
SOCIODEMOGRAPHIC PROFILE OF POPULATION

Demography

Structure of household income in the BMP locations was predominantly (86.6%) from aquaculture activities. (Figure 1). A large number of people engaged in traditional polyculture activities i.e. tiger shrimp/vannamel and milkfish culture.

Figure 1. Percentage distribution of main occupations of respondents in the two BMP locations

Based on the diagrams in figure 1, there are 5 main occupations in the BMP location which are dominated by pond aquaculture because it is concordance with geographical conditions in both locations.

Education

Education level of communities is an important factor in improving the community knowledge. The higher education level of the communities the higher quality of human resources will be. Personal motivation as well as the availability and accessibility of education facilities influence the quality of education achievement by the people.

In general, education levels of respondents in the project location were low. Based on survey data, the community that participated in the project, 1.67% were illiterate, 32% were educated to elementary level, and 33.33% to junior high school. Distribution of education levels of respondents is illustrated in Figure 2.
Figure 1. Percentage distribution of age class of respondents

Source: processed primary data
Household burden

Family member in a household of aquaculturists gave a consequence in the amount of socio-economic burden. In the project locations, the highest percentage of family member of 3 – 4 person was 52%, followed by 5 – 6 person was 29%, 1–2 person was 13%, 7 – 8 and 9 – 10 person were 3% (Figure 4). It was necessary to impede the family member in this study because there was a relationship between household burden and their motivation in improving business. There was a tendency that the higher of the household burden the stronger of the effort in working will be. The BM program was expected to be a choice by the aquaculturists to improve their pond production.

![Figure 4. Percentage distribution of age class of respondents](image)

Experience

Experience is the most valuable knowledge. Experience in brackishwater-pond culture took long processes, therefore, the knowledge that received from the experience is better than that of training activities. Most of brackishwater-pond aquaculturists implement a traditional system based on their experience in practicing polyculture of shrimp and milkfish "(pola U-B)".

Based of personal interviews, most of the respondents were experience in pond culture for many years. It was only about 11.67% of the respondents have less than 11 years of experiences and the rest was more than that (Figure 5).
Figure 5: Experience Distribution of respondents in practicing pond culture activities

Source: processed primary data

Figure 5 shows that most of aquaculturists in the BMP locations has more than 10 years of experience in brackish pond culture type "U-B". However, based on the personal interview, most of them implement a traditional system which is learned from other aquaculturists. Only a small number of them had received technology of training programs which were initiated by fisheries department and universities.

If the BMP program is faced to the experience of people, it is believed that a lot of socialization to the community because there is a tendency for traditional aquaculturists are reluctant to change what they believe if there is an indication that a lot of people were interested in the BMP programs, the aquaculturists in Pinrang and Barru regency did not know how to implement the program because they only followed by 1 person (1 farmer). Based on personal interviews, many of them were eager to join the BMP without funding as the program provide good results.

GROUP FARMER

The farmer group are media for accommodating aspiration of the fish farmers because they will find the solution of their problems of aquaculture. Brackish water culture activities occur along the coastal area, which is a residential region.
tights among the fish farmers, and disease problem of their animal rearing is the reasons for creating the group.

There is one group in Madello Village Barru Regency, namely "Sepakat", comprises 30 members. Meanwhile bigger group (16 groups) is Village Chief of Data Pinrang Regency as the bigger area of shrimp ponds available this region and the members just 10-15 persons for one group.

The groups of fish farmers were created basec on the needs to get access aquaculture information and to be easier to obtain production facilities and The following table shows the reasons of the fish farmers involve in groups.

**Table 2. Reasons of Fish Farmers Become Group Member in South Sulawesi**

<table>
<thead>
<tr>
<th>No</th>
<th>Reasons</th>
<th>Members</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To get information and knowledge of pond aquaculture</td>
<td>14</td>
<td>23.3</td>
</tr>
<tr>
<td>2</td>
<td>Easy to get production facilities and finance</td>
<td>31</td>
<td>51.7</td>
</tr>
<tr>
<td>3</td>
<td>There is cooperation among the members in solving shrimp disease problems</td>
<td>10</td>
<td>16.7</td>
</tr>
<tr>
<td>4</td>
<td>There are facilities to accommodate aspiration of fish farmers in certain areas</td>
<td>5</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The table 2 revealed that the main reason for fish farmers to get in the group is to be easier to get production facilities and finance. It means that the group roles are of a great importance in supporting their member efforts.

**Group Roles on the implementation of BMP**

From the interview is known that generally the members of the group have been trying to implement the production process by applying the pattern of BMP. Although not all group members already know the criteria BMP. In the table shows the knowledge of farmers on BMPs

**Table 3. Fish Farmer knowledge on BMP**

<table>
<thead>
<tr>
<th>No</th>
<th>Details</th>
<th>Members</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowing all the criteria BMP (8 criteria)</td>
<td>20</td>
<td>33.3</td>
</tr>
<tr>
<td>2</td>
<td>Knowing some BMP criteria (4 criteria)</td>
<td>31</td>
<td>51.6</td>
</tr>
<tr>
<td>3</td>
<td>Knowing less than 4 criteria</td>
<td>9</td>
<td>15.1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
On Table 3 shows that not all members know the BMP, though socialization and information sharing has been done. Groups that are less know the group criteria completely are generally in the Regency of Pinrang. This is because the leader of the group has not conveyed the information yet to the members. The reason is that if the trial fails, then it will be difficult to be accepted by the members. Therefore, the chairman of conducted the trial by did not involved its members.

In contrast, in Sepakat Group, the leader involved its entire member to witness the process of BMP implementation.

Both groups communication are the existing strategy within the fish farmer group. However, the creativity is depends on the characteristic and the custom of local area. Therefore, the role of the leader is very important in understanding the form approach for its members.

The Process of BMP Application

BMP method is one of the expected solutions to increase production and profitability of the fish farmers. As the initial step, a try-out was applied in the group fish farmers. H. Sarifuddin represents Madello Village and H. Akib represents Kedaweng Village.

Implementation of BMP method is still limited to try-out only. From the results realized, it was found that BMP method has not been known by most of the group members. The reasons for BMP Method has not been well socialized among the group members, are:

- There is no assurance of the success level of the try-out.
- The response of fish farmers seem to be less enthusiastic to the introduced aquaculture methods that is different to what they usually apply.
- Higher cost than the fish farmers usually spend in the production process.

However, there is a big willingness among the fish farmers to apply the BMP method. Analysis results suggested that there was 83.33% of fish farmers were ready to involve and the rest of the fish farmers (16.67%) did not agree to get involve. The main factors become their reason. The condition is shown to the following
However, the figure will occur if the BMP program application has shown a correlation with income level that may reduce the spent as mentioned above. Unfortunately, it is still difficult to do because the try-out applied in both study areas, Madello and Data Village, was not success, so that the program has not been used to be applied example to the fish farmers.

Forms of Group Communication

Information is an important requirement for fish farmers in order to improve their knowledge and skill of aquaculture. The information may come from the fisheries extension officers (DKP) or from Universities and industries related to the production and facilities supply. The results of interviews and FGD suggested that there was a different group communication method between Madello and Data Villages.

A figure that was concerned as informan, usually a fish farmer who has success in aquaculture or the capital owner. The figure will then became a man to consult and to get solution of aquaculture problems that faced by other fish farmers. Other figures were the fisheries extension officers and selected fisheries expert volunteers from related institutional, although some of the fish farmers said that the relationship among them was not well done.

In Madello Village, there was no centralized individual figure for aquaculture information service, although there were several names arose as the leader the farmers followed in shrimp culture activities. The general communication mode applied among the fish farmers is shown in the following figure:
In the Barru Regency, it has been shown successful to adopt community-based development (CBD) in Modello Village. Unfortunately, to be a good farmer, one must follow the method of aquaculture according to H. Akiib, as he showed the potential in aquaculture. The communication model in the village is illustrated as:

Communication plot, of the good aquaculture methods, among the fish farmers in Modello Village Barru Regency.

In Data Village, most of the fish farmers followed the method of aquaculture applied by H. Akiib, as he showed the potential in aquaculture. The communication model in the village is illustrated as:

Communication plot, of the good aquaculture methods, among the fish farmers in Data Village Pinrang Regency.

Implementation of BMP system is aimed to improve the quality and quantity of shrimp (Vannamei) culture production. In accordance with it, there are several techniques to be adopted by local fish farmers:

- Vannamei technique

The investment requirement of the technique in the BMP system is concerned with the need of the traditional plus system. Ironically, the economic profit for fish farmers is getting weaker.
2. Land use

In traditional plus system, Most of the fish farmers (72%) have one shrimp pond only whereas in BMP system, there should be at least 2 shrimp ponds, consisting one pond is used as reservoir and the other will be used for rearing. Number of production fish farmers in both study areas, Madello and Data Villages, is shown in the following figure:

![Figure 9. Percentage of ponds operated by each RT in the two study areas, Madello and Data Villages](image)

The above figure shows that less than 30% of fish farmers have more than one pond. To adopt the BMP method that required at least two ponds is therefore a problem for the fish farmers. It is because the fish farmers need extra cost to divide their pond into at least two ponds, besides the size of the ponds will be smaller so the stocking capacity then becomes lower.

CONCLUSION

1. According to the characteristics of fish farmers, there is an opportunity to develop BMP in Pinrang and Barru Regencies as the fish farmers mostly experience shrimp culture more than 10 years.
2. The main skill of the fish farmers is to culture shrimp and milkfish with traditional plus system and the management method they used based on the exchange experience among them.
3. Land status is 90% as the own land. This highly support the application of BMP as the decision will depend on the fish farmers.
4. Land size of the fish farmers are mostly small, so optimization use of production input is not enough to be efficient.
The role of group leader in implementing BMP is different in Barru and Pinrang Regency as a form of strategy of the group.

Group communication agreed not to be focused on the leader, but it is expected to be looser and spread evenly among the members. Modello group communication is looser on leader.

Information of shrimp culture techniques in Barru Regency was not merely from one individual only, but it may be taken from several figures arose from other fish farmers that concerned has succeed.

Information obtained by fish farmers in Pinrang Regency was more focused on certain figures only, either as the capital owner or the one that was concerned to have ability to be group leader of fish farmers.

REFERENCES


Auletta, J. and Photakoun, V. 2008 Livestock development and poverty alleviation: Innovation or evolution for upland livelihoods in Lao PDR? International Journal of Agricultural Sustainability Vol 6(1)
