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“Strengthening Science and Technology Towards the Development of Blue
Economy”

Editors:

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Preface

Waters as a part of earth is need to be developped especially in its sience and technology. that support

The relevance of the ISFM 2014 seminar theme, towards an evidence-based society, to a wide variety of disciplines is reflected in the diverse range of papers that have been submitted for publication. Altogether there have been 50 invited papers and 20 contributed papers included in the proceedings. These, together with the poster presentations, serve to demonstrate the popularity of the ISFM 2014 for sharing ideas and findings with a truly international community. Thank you to all those who have contributed to producing such a comprehensive ISFM 2014 seminars and proceedings and thus contributed to the improvement of the waters technology and development towards the development of blue economy across the world.

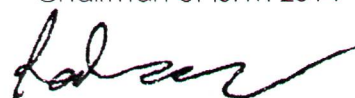
Foe making better quality of proceeding including international seminar, we involved the international programming committee to call for papers, review papers and finalise papers to be included in the proceedings. The refereeing process for ISFMS papers is optional but the number of papers submitted to the refereeing process has increased by nearly 10% on those submitted for ISFM 2013.

We invited expert of 4 countries to review the papers. I would like to thank all these reviewers for their time and effort in reviewing the papers. Without this commitment it would not be possible to have the important 'referee' status assigned to papers in the proceedings. The quality of these papers is a tribute to the authors and also to the reviewers who have guided any necessary improvement.

We hope in the next seminar, the program will be more success and help the world to optimize waters for developping country econic across the world.

Best Regards

Chairman of ISFM 2014



Rahman Karnila

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The Characteristics and Perception of Fish Farmer to The Field Facilitator Performance in Empowerment in Koto Mesjid Village

Zulkarnain^{1*}, Djuara P Lubis², Arif Satria², and Musa Hubeis²

¹PhD student in Post Graduate School of Communication Development Agriculture and Rural Bogor Agriculture University

²Lecturer in Faculty of Fisheries and Marine Science, Riau University
Lecturer in Post Graduate School of Communication Development Agriculture and Rural Bogor Agriculture University

ABSTRACT

The research had three main objectives. The first objective was to know the characteristics of fish farmer and facilities to aquaculture production. The second was to understand the perception fish farmer on the field facilitator. Correlation between characteristics and perception of fish farmer was also analyzed. Field survey was applied and 95 respondents was interview in the field. The result showed that, the fish farmer characteristics was varied in the area under study; in term of age, education and income, number of family members, pond size, working time and experiences. The majority of fish farmer age in adult categories, education is moderate, and high in income. The next, pond size is big in size (higher than 1000 m²), the family members can categories is middle categories, working time is moderate the categories in 4 until 7 hour in a day, and experience is high more than 10 years. Finally there is correlation between characteristics and perceptions.

Keywords: *characteristics, perception, fish farmer*

INTRODUCTION

The characteristic of human resources and natural resources are evenly important, to use and run them we need knowledge about potency and circumstances along with them. Personal characteristics as internal factors will affect one's ability to do their work. In this matter, include farmers, fishermen, and fish cultivators in run the business. Some researchs showed this result, for example: a research held by Chianu and Tjujii (2005) in Nigeria, young age and higher education people tend to have ability to apply innovation given to them. Another research held by Kposowa (1996) in Maryland, United State showed that the area width, knowledge, business experience, perception about soil' fertilize usage and technical skill affected one's ability in using organic fertilizer in the business. According to Soekartawi (2005) farmers' internal factor such as personal characteristics really affect the level of innovation adoption. Some farmers' internal factors are: age, education, and courage to take a risk, relationship pattern, attitude toward change, motivation to make a master piece, aspiration, fatalism, special believe system and psychology characteristic.

In general, communities' characteristic who live in a country side or village granted as having lower quality than community who live in a city. In order to increase such quality, some empowered attempts are done. Empowered activities in community are prepared in many methods and techniques. One way of the empowered attempts is by using facilitator.

Since Community seed unit (Unit Pembenuhan Rakyat) founded in 2008 and Communication Forum funded by PT Telkom in Koto Mesjid village in Kampar Regency built, there were some empowered activities done with the help from Fishery Department for the field extensions, facilitation activity and a facilitator from PT Telkom.

In doing the facilitate activity, facilitator are evaluated by the community. The evaluation in the context of perception of fish farmer toward associate performance. The empowered activity are hoped seriously done as code of conduct so that problems faced by the farmers in cultivate the fish can be solve quickly.

Facilitator's performance is the result work of an facilitators in doing his work along with the responsibility on the work itself. Facilitator's performance basically is what he do or don't in doing the work, as actual attitude of every facilitator as work achievement resulted from applying his responsibility and function as facilitator.

According to Rue and Byars (Keban 2000), performance is degree of accomplishment. Hence, the facilitator performance can be seen from the accomplishment of his goal determined before. To assess performance, indicators and measurements must be clear and fix in order to determine which one is more effective that are: the differentiation of resources allocation, the differentiation of organization's design and choices of distinction of job and function as mentioned by Bryson (Keban,2000).

Based on the explanation above the problem of the research is formulated as how are the fish farmers' characteristics, fish farmers' perception to facilitators' performance, production facilities given to fish farmers and in what extend are the relationship between fish farmers characteristics toward their perception to facilitators performance. The goal of the research is to answer the problems of the research, to know and analyze fish farmers characteristics, to analyze and to describe fish farmers' perception toward facilitators performance and to analyze and to describe the relationship between farmers' characteristic toward perception of facilitators' performance.

METHODS

The research is held in Koto Mesjid Village Kampar regency in July to December 2013 and then June to August 2014. The location choose in purpose (purposive) along with the goal of study. The research is done with quantitative approach and questioner. The method used is survey with the instruments of a list of guidance questions based on the indicators in the research. The data used in this research is secondary data gathered from government and private institutions.

The population of the research is the community of fish farmers. The group of sample of the research is taken in a purpose as many as 90 farmers from members of PT Telkom building partner who got the grant funding and finance to expand the aquaculture effort of *Pangasius hypophthalmus* as the potential commodity. The facilitators in perception toward associate performance in this research are independence facilitators and facilitators pointed by Fisheries Department from Government. Independence facilitators are the fish farmers as the leader of communication forum partnership with PT.Telkom. A guidance interview is done to measure perception of fish farmers toward facilitators performance. The list of the questions are made in two perceptions that are: perception toward production information facilitation and marketing information. The data gathered, analyzed using Likert scale technique which measure every item in score. The range of score is between 1 to 4 and then the data is correlated by using Spearman Rank Correlation. Primer data gathered from the interview are recapitulated and tabulated, and then the data are analyzed by using descriptive analysis (Kuntjoro,2007) and non parametric analysis (Siegel,1989) and finally the data are explained by using literatures and related theories.

RESULTS AND DISCUSSIONS

Age of fish farmers. Based on the result of the research, the average age of fish farmers in Koto Mesjid is 42 years old. The range of the majority of the respondents of the research is between 27 to 58 years old, the youngest is 27 years old and only one person in the age of 66 years old. From this data, we can conclude that 99 % of fish farmers are in productive age. The productive age is in the range of 17 to 65 years old (Rusli,1995). Productive age is the age of someone able to do something with his / her maximal capacity spiritually as well as physically.

The research by Kareem et al (2008) in Nigeria showed the same thing that the average age of fish farmers are in the age of forties (44 years old) and in Thailand the average age is 45 years old (Naksung 2003). Age plays a major role in increasing someone's ability in doing a business, in all aspects that are: cognitive, affective and physical skill. In cognitive aspect the age of 15 – 45 years old is the optimal age to absorb knowledge from outside (Padmodiharjo, 1994). Young people also have greater power than older person physically. In aquaculture business, a strong and powerful physic is needed to run the business especially in production aspect, started from preparing the pond, grooming and harvesting. The aquaculture business in Koto Mesjid village are mainly run by young people because it is profitable and need only short time to work in the pond.

Fish farmers' Formal education. The level of fish farmers' formal education in both Regencies categorized in low level (56,1%), within 7 years. The same thing happened in Thailand (Naksung 2003). Along with government program to obligate citizens to study 9 years, some of the fish farmers could not finish this program. Even 11,9 % fish farmers did not graduate from Elementary school (six years). Nevertheless, some fish farmers finish their undergraduate degree (2,9%). These fish farmers usually have another occupation as teacher or businessman. Research findings from Kareem et al(2008) in Nigeria showed that the level of formal education of fish farmers has implication to the production development through new technology adoption. Based on UNDP report (1998), education can release someone from slavery, injustice, fear, and make someone dare to develop their thought and idea, to talk and has a dream. To know the condition of internal characteristics from the fish farmers in Koto Mesjid village can be seen Table 1.

Table 1. The characteristics of Fish farmers

Personal characteristic	Categories	Scoring categories	Amount	Percentage (%)
Age Means =42,96	Not productive	> 65 years	1	1
	Productive	17 – 65 years	89	99
	Not yet productive	< 17 years	0	0
Total			90	100
Formal education Means = 12,5 th	Low	1 – 12 years	43	48
	Middle	13 – 15 years	32	36
	High	>16 years	15	17
Total			90	100
Income Means = Rp.4.453750,-	Low	< 2.million	9	10
	Middle	2 – 3.5 million	29	32
	High	> 3.5 million	52	58
Total			90	100
Family members Means=4,41 jiwa	Small	< 4	56	62
	Medium	4-6	13	14
	Big	> 6	21	23
Total			90	100
Experience Means= 10 years	Low	< 3 years	1	1
	Moderat	3 s.d 6 years	11	12
	High	> 6 years	78	87
Total			90	100
Pond size Means = 1174 m	Small	< 300 m	1	1
	Medium	300 - 600 m	49	54
	Wide	> 600 m	40	44
Total			90	100
Working time Means= 2,11 hours	Long time	> 4 hours daily	5	6
	Enough	2 s.d 4 hours daily	85	94
	A moment	< 2 hours daily	-	-
Total			90	100

Source: Prime Data, 2014

Job Experience. The fish farmers in average already run aquaculture bussiness within 10 years. Table 20 explains that most of the fish farmers (87%) have run the bussiness for long time, 12 % have moderate experience and only one farmer just started the aquaculture bussiness. This data explain that fish farmers who become the building partners in Koto Mesjid with PT Telkom have enough experience to develop and to run aquaculture business in ponds. Haverlock (1969) said that someone's experience influent his tendency to need and his readiness to receive new knowledge.

Family members. In general, fish farmers (62%) have a small family members (less than four person). In average, a household in Koto Mesjid village has four family members. This was also happened in Nigeria that a household has 5 person in it (Kareem et al. 2008).

Income. In average, family income from a fish farmer monthly is around Rp. 4.453.750,- (4,5 millions). Based on the income catagory, most of the fish farmers (58%) are in high level. The high income is caused by the fish farmers have a lot of production factors such as pond size and supporting financial t CSR PT Telkom. Fish farmers with a low income as many as 10 % is caused by they don't have enough production factors such as limited pond size.

Correlated by Poverty measurement from World Bank (2007), someone is catagorized as absolute poor if his daily income less than US\$ 1 and poor if his daily income less than US\$2. Hence, fish farmers in Koto Mesjid live in prosperity life.

Pond Size. Pond size is catagorized as a number of assets. In average pond size of fish farmers in Koto Mesjid is medium. If compared with Cianjur and Bogor's pond size it is smaller (Fatchia, 2010). But, it is still profitable.

Pond size is varied between 200 m, 400 m, 600 m, 800 m 100 m and 1500 m each pond size. If fish farmer has more than one ponds, they will be able to support to grow more seed. Pond that best handled will gain best product, and vice versa. Fish farmers who have wide pond size, generally higher social status in their community, and tend have ability to influence other people.

Working Time. Working time the majority of fish farmers as in middle category as around 94% within 2 – 4 hours daily. So the fish farmers in koto mesjid categories work in long enough time for aquaculture activities. The research about income and working time of onion farmers done by Julekha (2006). This research explained that farmer spent more time in another activities beside farming. This hapenned because their income from the other more than farming. Sabaingrum (1998) said that working time of farmer is less than formal and informal sector, but the income is higher than both sectors.

Perception of Fish Farmer toward Facilitator. Peception of fish farmer toward facilitator is significant to the success of facilitator activities. The good facilitator is some one who really work a long with his role.

Table 2 explained the perception of fish farmer toward independent facilitator and government facilitator are different. The independent facilitator more active than government facilitator in giving information of product and marketing. The government facilitators are not active as many as 57%, so the independent facilitators are more active to run their roles as facilitator.

Supporting of aquaculture production facilities. The supporting facilities of aquaculture are *Pangasius hypophthalmus* seed and funding of finance among fish farmers as member of Partnership Forum PT. Telkom. Table 3 Explained that, the majority of fish farmer got facilities

product from government is small category, and then from PT.Telkom is high. It mean that PT.Telkom gives more supports than government.

Table 2. Perception of fish farmer toward facilitator

Indicator	Categories	Scoring categories	Perception toward independent facilitator		Perception toward government facilitator	
			Total	(%)	Total	(%)
Perception to product information	More active	4	15	17	2	2
	Active	3	35	39	24	27
	Moderate	2	40	44	36	40
	Not active	1	-	-	28	31
Total			90	100	90	100
Perception to marketing information	More active	4	10	11	2	2
	Active	3	40	44	12	13
	Moderate	2	35	39	25	28
	Not active	1	5	6	51	57
Total			90	100	90	100

Source: Prime Data, 2014

Table 3. Supporting facilities aquaculture of fish farmer

Production Facility	Categori	Score Categori	Total	Percentage (%)
Facility from Government	Small	< 7.500 seeds	47	52
	Medium	7.500 – 15.000 seeds	11	12
	More	> 15000 seeds	31	36
Facility from PT. Telkom	Low	< 20 Million	2	2
	Middle	20 Million s.d < 40 Million	49	55
	high	40 s.d 60 Million	39	4

Source : Prime Data, 2014

The correlation of fish farmers characteristic and perception's toward facilitator performance. The result study of Admin Istiko Agus Wicaksono and Zulfanita (2012), said that the characteristics of farmer has a correlation more significant and significant, with farmer perception toward integrated pest control that are: age, formal education, farming experience, ownership of field, while interaction with another farmers has no significant correlation (Table 4).

Table 4. The correlation of fish farmers characteristics with perceptions

Fish farmer characteristics	Perception toward independent facilitator		Perception toward government facilitator	
	Production Information	Marketing information	Production Information	Marketing information
Age	-0.151	0.002	-0.147	-0.133
Formal Education	0.192 [*]	-0.022	0.317 ^{**}	0.280 ^{**}
Incoem	0.148	0.591 ^{**}	0-.050	-0.045
Family members	0.014	0.188 [*]	-0.072	-0.245 [*]
Experience effort	-0.052	0.169	-0.076	-0.040
Pond size	0.057	0.349 ^{**}	0.044	0.057
Working Time	0.026	0.053	0.082	0.237 [*]
Facility from Pemda	0.448 ^{**}	0.109	0.544 ^{**}	0.567 ^{**}
Facility from PT.Telkom	0.466 ^{**}	0.103	0.496 ^{**}	0.508 ^{**}

Source: Prime Data, 2014

*. Correlation is significant at the 0.05 level (1-tailed).

**.. Correlation is significant at the 0.01 level (1-tailed)

Table 4 explained that the characteristics of fish farmer has significant correlation with perception are formal education, income, family members, pond size, and production facilities from

government or PT.Telkom. there are different correlation between fish farmer characteristics with perception toward independent facilitator and government facilitator in giving product and marketing information of aquaculture effort.

CONCLUSIONS

Based on the research purpose and explanation above, can be conclude that: fish farmer characteristics in Koto Mesjid village are mainly in the productive age, education background in moderate level, family members in moderate, income in high, have wide pond size, have long term experience and have moderate working time. These conditions describe that fish farmer's characteristics in Koto Mesjid village mainly have a good character to run the business in fish aquaculture. The production facilities grant received by the fish farmers in Koto Mesjid village are seed of *Pangasius hypophthalmus* from government, in categorized as low and grant funding from PT Telkom is categorized as moderate. Fish farmers perception toward independence facilitators performance in getting production information is active compare with in getting marketing information. Their perception toward government facilitators in getting production information is moderate and then in getting marketing information is not active. The fish farmers' perception toward both of facilitators is different. That, the independence facilitator is more active than government facilitator. There are significant correlation between fish farmers' characteristics with their perception. They are: formal education, income, family member, pond's size, working hours, and production facilities grant from government and PT Telkom. There is a significant relationship between some characteristics variables to fish farmers' perception toward independence facilitator's performance than government facilitators.

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