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MANAGERIAL BEHAVIOR CHANGE OF MARGINAL POND FARMERS THROUGH PHRONIMA "SUPPA" FIELD SCHOOL

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ABSTRACT

Shrimp ponds in Indonesia have not returned to their normal productive condition because of an outbreak of WSSV and *Vibrio harvey* since 1998. Management and technical areas do not comply with the rules of environmentally friendly farming, causing fatalities and massive harvest failure. Since 2005, *Phronima Suppa* (*Phronima* sp), endemic organisms in *Tasiwalie* village, has been developed. The research aimed to synthesize the field school learning model and analyze their impact on managerial behavior change, increased production and income of the field school participants utilizing the advantages of *Phronima Suppa*. The study was conducted in *Tasiwalie* village from March to November 2015. The data was collected through observation and in-depth interviews. Synthesis of the field school model was obtained from 166 respondents and the impact of the field school was based on information from 25 people. The research outcome indicates that the learning methods in the field school tailor farmers technology mastery (39.68%), the material is directly demonstrated (23.81%) and discussed in the field (21.90%), the curriculum consists of acquisition of quality fry (45.57 %), disease is prevented (53.44%), pond is well-prepared (28.13%), the *Phronima Suppa* stock is developed (54.63%), local resources are utilized (34.19 %), and the suitability for the export quality standards is preserved (37.67%). Now that those farmers have attended the field school, they are able to improve their managerial behavior quality and increase the production of tiger shrimp (244 ± 71 kg/ha/season) and revenue (IDR 17.84 ± 4.61 million/season), which is also quite significant ($P < 0.05$). This is absolutely better than what they achieved before coming to the school. Their participation in the school has succeeded in changing their managerial behavior as well as increasing production and income of their marginal ponds. This proves that the field school learning model effectively improves productivity of marginal pond areas.

Keyword : Managerial Behavior, Marginal Pond, Tiger Shrimp, *Phronima Suppa*, Field School

1. Introduction

Over the last twenty years tiger shrimp (*Penaeus monodon* Fabricius) industry in Indonesia infected white spote syndrome virus (WSSV) and the *Vibrio harvey*. The pathogen outbreak caused a decline in the environmental carrying capacity and the poor managerial behavior of shrimp farmers¹ and the impact of extreme climate due to global warming. The farmers managerial behavior in the *Tasiwalie* village still in the poor category¹. This impact on the extent of the of marginal ponds area and idle pond in Pinrang Regency cause of WSSV viral and *V. harvey* infection. Losses due to disease of shrimp in Indonesia is estimated to reach more than 300 million USD or more than IDR 3 trillion every year².

South Sulawesi province been assigned become the center of tiger shrimp development in Indonesia with a major development area in Minapolitan Area in Tasiwalie Village and Waringtasi Village, District Suppa, Regency of Pinrang³. In 2005 the was found Phronima suppa (*Phronima* sp) population which is endemic to the waters and certain pond in the Tasiwalie Village and Waringtasi Village³. Phronima suppa is a kind of micro-crustaceans originating from the genus Phronima. Phronima suppa not found outside of the villages. Phronima suppa existence as a preliminary indicator for farmers in Pinrang to estimate the success of tiger shrimp farms in areas that are being infected WSSV viruses and V. harvey.

Applications Phronima suppa successfully stimulate an average production of tiger shrimp of Pinrang Regency. Average production ponds that do not use Phronima suppa only for 50.63 ± 24.27 kg/ha/season lower than 285.44 ± 88.02 kg/ha/season produced ponds with apikasi Phronima suppa⁴. Replication of Phronima suppa application widely require learning process effective and appropriate technology transfer. Land management pond with suppa Phronima applications requiring technical and management approaches that are specific 5. To accelerate the increase in the sustainable production of tiger shrimp pond farmers learning process at the Phronima "Suppa"Field School. Field school is non-formal learning process for tiger shrimp farmers to improve their knowledge and skills in recognizing and developing local potential, the application of environmentally friendly technologies, and sustainable business development. This study aims to synthesize a model of learning in the field school, analyze ponds farmers changes in managerial behavior as well as the impact of learning on the school field to increase production and income of marginal ponds ponds to utilize the advantages of Phronima suppa.

2.Previous Work

The concept of sustainable development is to integrate economic and ecological perspective⁶. Sustainable development according to FAO (1995)⁷ in the context of fisheries resource management is based on the management and conservation of natural resources as well as the orientation changes in technology and institutions in an effort to meet the needs of the present generation, without compromising the need future generations. In general, the main issues in aquaculture development planning is the right technology, Minimize the environmental impact of aquaculture, consider the carrying capacity of the environment, disease Minimize, maximize its value of production, and reduce poverty⁸. Indonesia's export performance would be severely impaired if its export industry does not meet the requirements Ecolabeling⁹. In line with the increased consumer demand for quality assurance (quality assurance) on fishery products which are marketed on the implementation of agreed global markets hazard analysis critical control point (HACCP), which includes site selection , seed selection, procedures for production, water management, harvesting, post-harvest handling and sanitation procedures for implementation¹⁰. Based on the results of the assessment (scooring) on behavior management Tasiwalie fish farmers in the village obtained a value of 19 or are in the bad category¹. The learning process is managed by the community by utilizing the existing facilities in the community and stressed the importance of community participation (participatory) on each learning activities and aims to address community needs. The field school model community expected an increase in line with the concept of thinking skills-based constructivism and community-based schools (community-based school). This is in line with the paradigm of community-based education on non-formal path should use the technology in accordance with the conditions and the real situation in the community¹¹. The community-based education is a process of education that is based on the lives of the people who put every problem and needs in the life of the community¹².

3.Material and Method

3.1. Location and Time

The study was conducted in the village of Tasiwalie and Wiringtasi in March until November 2015.

3.2. Data Collection Technique

The study was conducted in two stages: (1) the synthesis of the field school model and (2) analysis of the impact of the implementation of the field school to changes in managerial behavior of farmers as well as increased production and income of marginal ponds farmers. The data collection is based on the observation and in-depth interviews. Respondents are set purposively. Synthesis of the model field school based information from 166 respondents and impact field school is based on information from 25 participants field school.

3.3. Data Analysis

Analysis of the data using two descriptive and quantitative approaches. Quantitative analysis was conducted to the significance level test of the field school model and the impact of the implementation of the field school to changes in managerial behavior, increased production and ponds farmers income.

3.3.1. Model Sekolah Lapang

Analisis metode pembelajaran dan muatan kurikulum sekolah lapang menggunakan analisis chi-square¹³:

3.3.1. Field School Model

Analysis of teaching methods and curriculum field school using chi-square¹³ analysis:

$$X^2 = \frac{(\rho - H)^2}{H} \dots\dots\dots 1$$

X^2 = chi-square value

ρ = degrees of freedom

H = half of respondents number

If the chi-square analysis shows the relationship between the two variables continued with contingency test as follows:

$$C = \sqrt{\frac{X^2}{X^2 + n}} \dots\dots\dots 2$$

C = contingency

X^2 = nilai chi-square value

n = number of samples

3.3.2. Managerial Behavior Change

Changes in managerial behavior calculated based on a formula¹⁴ as follows:

$$M = aX_1 + b(4X_2) + c(3X_3) + d(4X_4) \dots\dots\dots 3$$

M = managerial behavior

X_1 = target

X_2 = planning

X_3 = decision

X_4 = control

a, b, c, d = score any management functions

3.3.3. Increased Production

To determine the increase in production after attending the field school used two different test¹³ as follows:

$$t = \frac{\bar{X}_{pr2} - \bar{X}_{pr1}}{s \sqrt{1/n_2 + 1/n_1}} \dots\dots\dots 4$$

t = two different test
 $\bar{X}_{pr1}$ = production before attending the field school
 $\bar{X}_{pr2}$ = production after attending the field school

3.3.2. Increased revenue

To determine the increase in production after attending the field school used two different test¹³ as follows:

$$t = \frac{\bar{X}_{pd2} - \bar{X}_{pd1}}{s \sqrt{1/n_2 + 1/n_1}} \dots\dots\dots 5$$

t = two different test
 $\bar{X}_{pd1}$ = revenue before attending the field school
 $\bar{X}_{pd2}$ = revenue after attending the field school

4.Result and Discussion

Respondents suggested learning methods in the field school (Table 1) and the learning curriculum content (Table 2). The results test showed variable statistics differ significantly (P <0.05). Most of the respondents (39.68 percent) proposes a method of learning delivered at the field school participants adapted to technological mastery. Teaching material is delivered in the form of direct practice (23.81 percent) and discussions carried out directly in the field (21.90 percent). A total of 14.60 percent of respondents suggested the demonstration and field practice.

Table 1. Learning Method

No	Uraian	Frekuensi	Persentase
1	Disesuaikan dengan penguasaan teknologi	125	39,68 ^a
2	Materi dipraktekkan langsung	75	23,81 ^b
3	Materi dibahas dalam diskusi lapang	69	21,90 ^c
4	Demonstrasi dan praktek lapang	46	14,60 ^d
	Total	315	100,00

In Table 2 shown recapitulation curriculum suggested by the respondents. All variables were significantly different (P <0.05). The majority of respondents (54.63%) proposes the development of the Phronima suppa stock a top priority role in the field school curriculum. Phronima suppa development is expected to become the main material being studied to increase production and revenue of farmers.

Table 2. Freight Field School Curriculum

No	Uraian	Frekuensi	Persentase
1	Pengembangan stok phronima	124	54,63 ^a
2	Tata cara pencegahan penyakit udang	140	53,44 ^b
3	Perolehan benur berkualitas	97	45,57 ^c
4	Memenuhi standar mutu ekspor	84	36,67 ^d
5	Pemanfaatan SDA lokal	80	34,19 ^e
6	Pengeringan tambak	72	28,13 ^f

Source: Data after processing

Other learning materials needed by farmers is related to the prevention and control of diseases tiger shrimp is the main cause of the tiger shrimp ponds marginal. The main priority of learning

materials in the field school is an ordinance of shrimp disease prevention (53.44%), the acquisition of quality juveniles (45,57%), meet the quality standards of export (36.67%), utilization of local resources (34.19%) and drying ponds (28.13%).

Table 3 shows the impact of learning on marginal ponds farmers field school. Managerial behavior pond farmers in 2003 still are in the bad category 1 and has increased to well in 2015

Table 3. Development of Managerial Behavior Before and After Following Field School.

No	Fungsi-Fungsi Manajemen	Kondisi Faktual ¹ (2003)	Kondisi Ideal	Bobot	Tahun			
					2003		2015	
					Skor	Nilai	Skor	Nilai
1	Sasaran	Produksi 72 kg/ha/MT	Produksi 400 kg/ha/MT	1	1	1	3	3
		Sintasan : 19%	Sintasan : 80%					
2	Perencanaan	Padat penebaran : 15.000 ekor/ha	Padat penebaran : 20.000 ekor/ha	4	2	8	2	8
		Sistem parsial	Sistem parsial					
		Media tidak diolah	Media diolah					
3	Pengambilan keputusan	Pengeriangan : 5 hari	Pengeriangan : 30 hari	3	2	6	2	6
		Saponin : 100 kg/ha	Saponin : 15 ppm					
		Kaptan : 8 kg/ha	Kaptan: 1 ton/ha					
		Urea : 100 kg/Ha	Urea : 300 kg/Ha					
		TSP : 100 kg/ha	TSP : 150 kg/ha					
		Tanpa pupuk kandang	Pupuk kandang : 750 kg/Ha					
4	Pengendalian	Sistem kontrol tidak jelas	Sistem kontrol bersifat baku	4	1	4	1	4
Total						19		21

Keterangan : Skor : Sangat baik = 5; Baik = 4; Kurang = 2; Sangat kurang = 1

Perkembangan : Sangat Maju = 40.5-50.0; Maju = 20.5-40.0; Buruk = 10.5 – 20.0; Sangat Buruk < 10

Learning on the school field and internasilasasi personal experiences of farmers leave accumulated knowledge and skills to manage ponds marginal encouraging change managerial behavior in ponds marginal farmers. Significant advancements in managerial behavior resulting in the aspect of production targets. In 2003 the tiger shrimp production reached 72 ± 7 kg/ha/season with a survival rate of 19 ± 2% increased to 244 ± 7 kg/ha/season and a survival rate of 66 ± 19% (Figure 1). Other managerial aspects of the planning, decision-making, and control is relatively no significant changes.

Production and farmers revenue before and after attending the field school is presented in Figure 1. Production before attending the field school by 72 ± 7 kg/ha/season and increased to 244 ± 71 kg/ha/season after attending the field school. After attending the field school shrimp pond production increased significantly (P <0.05) compared with before participating in the field school. Production before joining the farmers field schools have not improved compared to that in 2003. After participating in the learning field school for three months and practiced directly on a pond each farmers produce tiger shrimp production increase to 244 ± 71 kg/ha/season.

Production reached a field school participants are still lower than the demonstration pond (285.44 ± 88.02 kg/ha/season), 61.54 ± 10.36 % survival rate, and 39.67 ± 0.71 tiger shrimp size with Phronima suppa application for 47.00 ± 2.12 days⁴. The production of field school participants can be enhanced by the Phronima suppa application whole and continuity of guidance the farmers in the field school.

The farmers revenues increased to IDR 17.84 ± 4.61 million/ha/season higher than before attending the field school (IDR 6.20 ± 1.57 million/ha/season) (Figure 1). Income of farmers has increased significantly (P <0.05) than before participating in the field school.

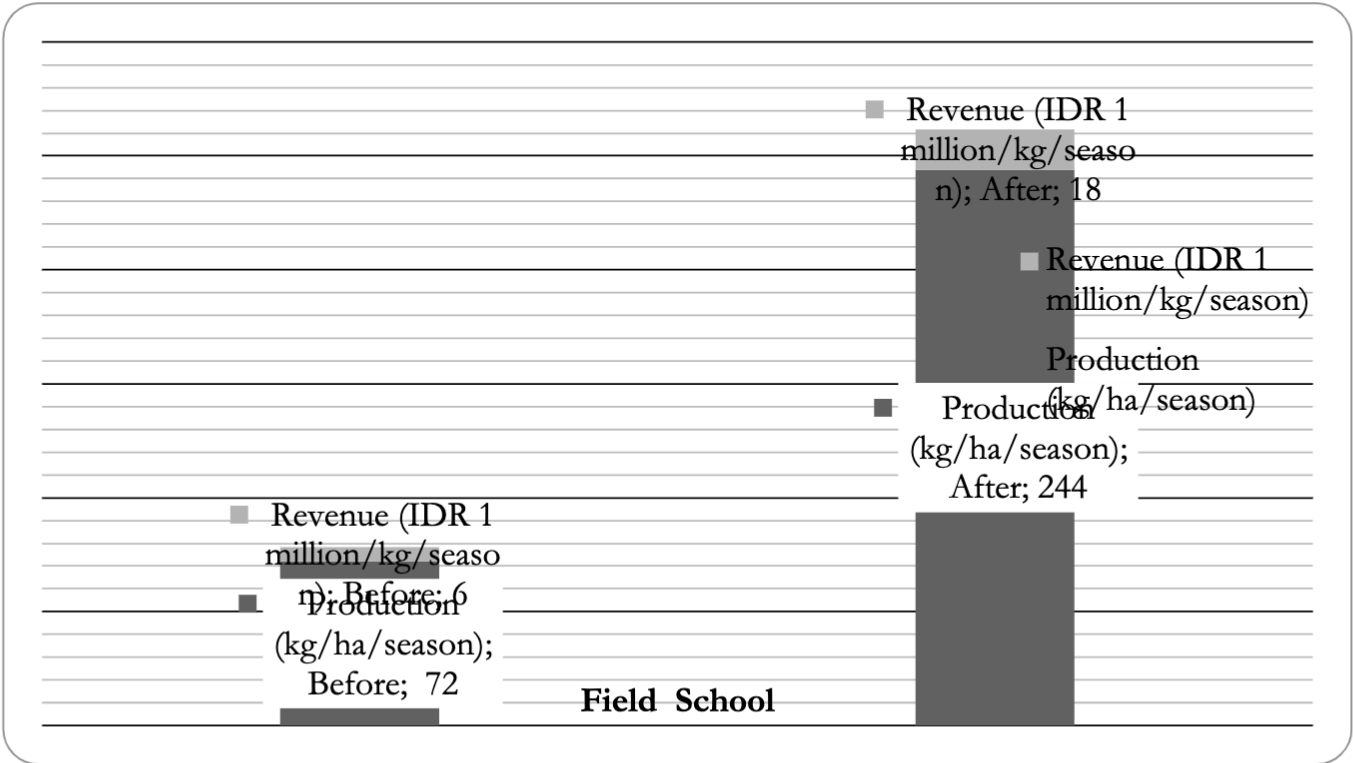


Figure 1. Production and Income Before and After Following Field School

Increased production of tiger shrimp in the ponds should be followed by marginal fulfillment aspects of efficiency and competitiveness in the global market and therefore contributes directly to increased income of farmers. Learning in the field school conducted continuous with the material as presented in Table 2.

5.Conclusion and Future Work

Learning methods in the field school adapted to the advanced level of technology by the farmers and the material learned can be applied directly. The problems that occurred during the production process a solution found through field days on an ongoing basis. Field school curriculum in marginal ponds prioritize the acquisition of quality fry, procedures for the prevention of disease, draining ponds, stock Phronima suppa development, utilization of local resources, and the fulfillment of export quality standards. Participation in field school succeed in changing the managerial behavior of farmers as well as farmers increase production and revenue marginal ponds.

Used as a field school learning model is effective in improving the productivity and revenue farmers on marginal pond area. The learning process in the school field to utilize the facilities available in the community and emphasizes community participation and learning output is used to respond to the problems and needs of the community.

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REFERENCES

1. Fattah, M.H dan Busaeri, R. Perubahan Perilaku Manajerial Petani Penerima Bantuan Saluran Tambak. Jurnal Ilmiah Mutiara Perikanan dan Ilmu Kelautan. 2003; 2 : 12 – 23.

2. Rukyani, A. Masalah Penyakit Udang dan Harapan Solusinya. Sarasehan Akuakultur Nasional, Bogor. 2000; 12 hal.
3. Fattah, M.H. dan Saenong, M. Uji Pendahuluan Kultur Udang Suppa (*Phronima* sp). Laboratorium Lapang Akultur. Fakultas Perikanan dan Ilmu Kelautan, Universitas Muslim Indonesia (UMI), Makassar. 2008; 47 hal.
4. Fattah, M.H, Saenong, M., Asbar, and Busaeri, S.R. Production of Endemic Microcrustacean Phronima Suppa (Phronima sp) to Substitute Artemia salina in Tiger Prawn Cultivation. Journal of Aquaculture Research and Development. 2014; 5:257.
5. Fattah, M.H., Asbar, and Busaeri,S.R. Dynamics of Endemic Habitats Microcrustacean Phronima Suppa (*Phronima* sp) as Determinant of Atificial Production Development. Journal of Life Science and Technologies (JOST). 2015; Vol. 3 No.1.
6. WCED. World Commission on Enviroment and Development (ed) *Our Common Furture*. Oxford University Press. Oxford. 1987.
7. FAO. Code of Conduct for Responsible Fisheries, FAO, Rome. 1995;41pp.
8. Nautilus Consultants. Planning for Coastal Aquaculture Development, A Training Course Handbook. www.nautilus-consultants.co.uk. 2000 October.
9. Razak, M.N. Faktor-faktor Strategis Ekspor Udang Windu Berbasis Ekolabeling di Sulawesi Selatan. Tesis. Program Pascasarjana UMI, Makassar. 2005; 147 hal.
10. Nurdjana, I.M. Membangun Kembali Sang Primadona. Makala Dipresentasikan pada Seminar Nasional Udang II di Bandung, 10 September 2005. Dirjen Perikanan Budidaya DKP, Jakarta. 2005; 15 hal.
11. Sudjana, D. Pendidikan Luar Sekolah. Bandung: Falah Production. 2000; 125 hal.
12. Sihombing, U. Pendidikan Luar Sekolah, Kini dan Masa Depan. Jakarta: PD. Mahkota. 1999; 210 hal.
13. Walpole, R.E. Introduction to Statatistics. 3rd Edition. Mac Milllan Publishing Co., Inc, New York. 1982; 510 p.
14. Suryana, A.S. Pola-pola Perilaku Manajerial Petani Tambak di Kabupaten Pangkep, Sulawesi Selatan. *Dalam* Dimensi Sosial Kawasan Pantai. Mukhlis (ed). The Toyota Foundation-SA Brother's, Jakarta. 1988; Hal 437-478.