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Research Paper

Information Network Output of Tilapia Pond Farmers in Ifugao, Philippines

Development Communication

KEYWORDS : Information network output, knowledge, tilapia pond farming

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ABSTRACT

Tilapia has become the mainstay of many small-scale aquaculture projects of fish farmers in the Philippines. This study was conducted to analyse the information network output (INO) of tilapia farmers in terms of knowledge in tilapia pond farming. It sought to identify the personal, economic and situational factors influencing respondents' INO. Data were obtained from a sample of 443 tilapia farmers in Ifugao using the snowball sampling technique. Descriptive statistics such as frequency, percentages, mean and standard deviation were used. Data were analysed using Statistical Package for Social Sciences (SPSS). Correlation analysis was utilized to test the level of association between the variables. Most (73.40%) of the respondents were knowledgeable of the technology in tilapia pond farming. Age, years of operation, income and closeness to source of information had significantly influenced the respondents' INO in tilapia pond farming.

INTRODUCTION

Tilapia aquaculture industry is one of the industries that offers great opportunity to spur economic growth in the province of Ifugao, Philippines. Aside from being an important source of protein, aquaculture is recognized as a source of employment and an essential component of integrated rural development (Sevilleja, 2000).

Tilapia pond farming is now gaining popularity among small-scale farmers in the communities as this method is among the more viable fish production ventures in the province. According to Delos Trinos (2003), one advantage of this method is that fish are able to utilize natural foods. Local households now have engaged in tilapia pond farming since tilapia can be economically grown in small-scale operations. But still, the province is not yet self-sufficient in fish because of low production capacity. Data shows that the demand for fish in the province is more than four times its actual production (PLGU-Ifugao Profile, 2009). The present situation implies that local communities require information on various facets of rural livelihoods especially tilapia pond farming that will enhance opportunities and reduce vulnerabilities.

Indubitably, tilapia pond farmers in Ifugao form an essential segment of the workforce. Thus, any effort designed to improve Ifugao's economy in general and lives of its small-scale farmers in particular, must take cognizance of the tilapia pond farmers' role in livelihoods and food security. Relative to this, their information needs have to be met because in this rapidly changing world, information and knowledge is one of the most important factors of production. Delos Trinos (2005) stated that knowledge and information are essential for people to respond successfully to the opportunities and challenges of social, economic and technological changes. These include those that help improve productivity, food security, and rural livelihoods.

Hence, it is important to have an assessment of the tilapia pond farmers' information network output as a decision-making unit and how the information network output is influenced by personal, socio-economic, and situational factors.

PURPOSE OF THE STUDY

The purpose of this study is to assess the information network output (INO) of tilapia pond farmers in terms of their knowledge on the package of technology (POT) in tilapia pond farming. Also, it sought to identify the factors influencing the INO of the tilapia pond farmers in terms of personal, economic, and situational factors.

METHODOLOGY

The Conceptual Framework of the study

The framework of the study presupposed that the dependent variable is influenced by the independent variables. The information network output (INO), which is operationalized as the level of knowledge of fish farmers on the recommended practices in tilapia pond farming, served as the dependent variable in this study.

Meanwhile, 14 independent variables were hypothesized to influence the dependent variable. Independent variables include:

1) Personal factors. Refer to the individual attributes of the respondents in terms of age, marital status, level of education, household size, and communication skills. It also indicate information sharing of respondents.
2) Economic factors. Refer to the respondents' individual attributes with reference to income, land holdings, and years of experience in tilapia pond farming.
3) Situational factors. Refer to the individual circumstances of the tilapia pond farmers in terms of their social participation, information seeking behavior, access to credit, extension participation, and closeness to sources of information.

Sampling Design

The sample size of 443 respondents were selected from the municipalities of Ifugao which have the highest number of tilapia pond farmers. Snowball or chain referral technique was used in the study. This method employs the presumed social networks that exist between members of a target population to build a sample.

Research Design

The survey research, a quantitative approach was used to gather information on the personal, economic and situational factors, and the information network output of tilapia pond farmers. Personal interviews with key informants were done to supplement the quantitative data especially on the information network output of tilapia pond farmers.

Method of data collection

Quantitative data was collected through a survey questionnaire. Before the actual survey, the set of questionnaire used to generate data for the study was pretested among ten respondents. Necessary modifications and revisions were made to suit the

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questionnaire to the actual conditions of the respondents.

In order to measure the tilapia pond farmers' level of knowledge on the POT in tilapia pond farming, 'teacher-made type' test was developed. Various items were selected for the knowledge test in respect to the recommended pond farming practices and these were given weights such as 0 for Nil, 1 for one correct answer, 2 for two correct answers.

Qualitative data was used to supplement and fill gaps during the quantitative data collection process. Qualitative data was collected through field visits and informal interview with key informants.

Method of data analysis
Descriptive statistical tool was used to analyse the quantitative data. Means, percentages, frequencies, and standard deviations were utilized to summarize and categorize the research data. Correlational analysis was also used to analyse the influence among variables through the Pearson's Product Moment Correlation Analysis using the SPSS software.

RESULTS AND DISCUSSION
Information network output of tilapia pond farmers
In this study, information network output (INO) refers to the knowledge of tilapia pond farmers in tilapia farming using the package of technology (POT).

Level of knowledge in tilapia pond farming was measured by ascertaining whether the respondents are knowledgeable or aware of the recommended practices in tilapia pond farming covering the areas; site selection, pond preparation and management, time of stocking and stocking density, feeds and feeding practices, and pests and diseases control.

Respondents were categorized according to the number of point score as follows:

Score	Descriptive Rate
15-21	Highly knowledgeable
8-14	Knowledgeable
1-7	Somewhat knowledgeable
0	No knowledge at all

Nearly three-fourths (73.40%) of the respondents fell under the category "knowledgeable" of the recommended practices in tilapia pond farming. Almost one-fourth (23.00%) of the tilapia pond growers were "highly knowledgeable" and 3.60% were "somewhat knowledgeable".

TABLE 1: "Table showing the INO of tilapia pond farmers on the POT in tilapia pond farming"

Score in tilapia pond farming practices test	F	%	Description
0	0	0.00	No knowledge
1-7	16	3.60	Somewhat knowledgeable
8-14	325	73.40	Knowledgeable
15-21	102	23.00	Highly knowledgeable

Average Score: 13

Factors influencing the INO of tilapia pond farmers
Fourteen independent variables were considered to influence the INO of the tilapia pond farmers. Out of these, five were found to have significant correlation with the INO of tilapia pond farmers in terms of knowledge on the POT in tilapia pond farming.

Personal factors
Statistical results show that two personal attributes are positively and significantly associated with the INO in terms of knowledge in the POT in tilapia pond farming.

Age was found to be significantly related (r=(-)0.159, p=0.001). This result signifies that individuals who belong to the middle bracket (31-45 years old) have negative correlation to the INO. The result implies that age serves as a very significant factor that influence the INO of the tilapia farmers in tilapia pond farming.

Information sharing had significant relationship with INO of tilapia farmers. This implies that when farmers share their knowledge on tilapia farming, more tilapia farmers become knowledgeable on the tilapia pond farming technology.

This is in agreement with the study of Asres (2005) and Deribe (2007) which showed positive correlation between information sharing and the respondents' knowledge in farming.

Economic factors
In this study, three economic factors such as land ownership, years of operation and income were hypothesized as important determinants that have influence on the INO of tilapia pond farmers. Statistical results manifest that years of experience in tilapia fish pond operation (r=0.183, p=0.000) and income of TPG (r=0.187, p=0.000) were positively correlated with the INO of tilapia pond farmers.

This result means that as the respondents' number of years of tilapia pond operation experience increases, their level of INO on the POT in tilapia pond farming also increases. This implies that experience gained through the years from tilapia pond farming has positively influenced the INO.

Table 2: "Table showing the correlation coefficients on the personal, economic, and situational factors and the INO of tilapia pond farmers"

Factors	Coefficient (r-value)	p-value
Personal		
Age	-0.159 **	0.001
Marital Status	0.017	0.172
Educational Attainment	0.065	0.214
Household size	-0.029	0.545
Communication skill	0.060	0.210
Information sharing	0.118 **	0.013
Economic		
Land ownership	0.006	0.899
Years of experience in fish pond operation	0.183 **	0.000
Income	0.187 **	0.000
Situational		
Social participation	0.075	0.120
Information seeking behaviour	0.067	0.156
Closeness to source of information	0.121*	0.011
Access to credit	0.025	0.606
Extension participation		
Contact with extension workers	0.071	0.136
Involvement in extension planning	0.056	0.246
Involvement in training	0.025	0.614

** Highly Significant

* Significant

As to income, result implies that as the income of the tilapia pond farmers increases, their INO also increases. It can be inferred that respondents with improved resources in terms of income were in a better position to invest more on recommended tilapia pond farming that would further increase their earnings.

Situational factors

This study considered social participation, information seeking behavior, proximity to source of information, access to credit, and extension participation as determinants of the INO of tilapia pond farmers. Only closeness to source of information ($r=0.067$, $p<0.05$) as situational factor had significant correlation to the INO in tilapia pond farming. This implies that proximity of the respondents to sources of information such as feed dealers, fellow tilapia farmers, friends, relatives, fingerling dealers, extension workers, etc. had positively influenced their INO. Further, the result means that the closer the respondents to the sources of information, the higher the level of INO in tilapia pond farming.

CONCLUSION

The tilapia pond farmers' information network output was categorized as "knowledgeable". This level of knowledge on the recommended practices in tilapia pond farming was significantly correlated with these factors: age, information sharing attribute, income, experience in tilapia pond farming, and their closeness to the various sources of information.

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