The Impact of Non-fishery Income

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Abstract: The declining fisheries resources cause decreasing in fishermen's main income. Due to this problem, fishermen's face the pressure to improve the quality of life. Hence, fishermen are forced to do a side job to increase their income. The side income is a factor that could help the fishermen to increase the overall income. Through this additional income, fishermen's quality of life can be improved. The study was conducted in the area of Pulau Langkawi and Kuala Kedah, Kedah. This study is to identify that non-fishery income influence fishermen to increase the overall income. Data was collected randomly in fishermen village located in area of Pulau Langkawi and Kuala Kedah, Kedah. Total of respondent are 209 fishermen. The main objective in this study is to identify whether the non-fishery income or side income influence fishermen to increase their income and quality of life. The data was analyses by using SPSS and the result will show through the descriptive analysis and regression analysis.

Keywords: non-fishery, income, quality of life, fishermen, Malaysia.

1. INTRODUCTION

The fisheries sector is a sector that provides the income to over 100 million of fishermen. The majority of small fishermen in developing countries, of which 90 percent are from Asia and Africa. Poverty and fishermen are synonymous with the poverty, and rate of poverty in this area is very high. To overcome this problem, some of fishermen will carry out more fishing activities for make sure their income will increase. But, this is not the solution for the problem because this will make overfishing on that area. This also will cause food supply problems if this situation continue with no solution in long term.

For fishermen the important issues is poverty and it's will give the impact to the social and cultural, environmental quality, education and health issues among fishermen communities. For better quality of life among fishermen, side income is the one of solution. From this side income, fishermen could add some income to fulfil consumption.

Most of the fishermen are involve in business that related to fishery as their side job such as opening a restaurant, selling fishery product at night market and selling their own catch or carry out tourism-related activities. These fishermen will bring tourists or fishing boats to the fishing grounds or places of interest to visit. This activity helps fishermen increase their income.

The main objective of this study is to identify the impacts of non-fishery income to the fishermen income. The main impact to be seen through the quality of fisherman's life, whether the fisherman's quality of life changing or vice versa.

2. LITERATURE REVIEW

The decline in the number of fisheries resources has put pressure on fishermen to increase the number of fishermen's income. The problem of national fisheries resources has been declining due to the excessive fishing problem that occurred among fishermen. This problem caused the fisherman to choose to do side work due to the insistence of life for survival [1]. [2] stated that the problem of poverty in the social structure of the unbalanced, environmental problems, and lack of infrastructure are the things that fishermen must face.

The problem of catching fish occurs in many less developed and fisheries sectors. In Brazil for example, [3] stated that the problem of degradation of fisheries resources has caused fishermen in the area to seek alternative alternatives to increasing income. Of these problems, fishermen in the area produce shrimp farms to increase revenue. The fishermen are still out fishing, while at the same time ensuring that shrimp breeding is in good condition.

This shrimp farm not only helps fishermen to increase their income but also creates job opportunities for residents around the area. Even household members can also help household heads increase income. The problem of lack of income from these fisheries has also caused household experts to strive to assist household heads by conducting economic activities. Based on [4], household members acted as head of household to increase income by conducting income-generating activities

[5] stated that farmers' income by non-agricultural income is a very important income to increase the household income of the farmers. Farmer dependence on the main source of income causes the farmer are difficult to exit of poverty. [6] also see that this non-agricultural income can help these farmers out of the poverty line in short term.

The problem of poverty that hit the Sub Saharan Africa has caused households in the area to find solutions through diverse income. This diverse source of income allows these households to get out of poverty. The dependence of this household into one source alone leads to limited income and this household cannot get out of poverty. Through this diverse income, these household income can be stabilized and thus reduce poverty. Due to the poverty problem that these fishermen have experienced, some initiatives have been taken by fishermen to raise their income level. Among them is to run more than one job.

3. METHODOLOGY

This study was conducted using interview methods. Techniques of collecting data and analysing data are very important because in this section, the results of the study can be seen clearly. The methods and methods to be used will determine the results collected. If the techniques and methods used are correct, good information will be obtained and the results will be shown after analysis.

This area is selected based on the characteristics of fishermen in the area as a whole is the same. Among the same features is the fishermen in the area are traditional fishermen and use the easy equipment and the same assistance given by the government. The size of the fishermen sample is randomly selected as this study is conducted in fishermen's area with the majority of the population working as fishermen. Based on the study area, 10 percent of the total fishing population is randomly selected to answer the questionnaire. Total of the fishermen's that has been choose as respondents are 209 fishermen's. The model below shown non-fishery income relationships with fishermen's main income.

Based on the objectives, the model established:

$Y = \alpha$ + non-fishery income + no of child + experience + seasons + status + skill + share + role + no of fishing + equipment + cost + help + age + education + artificial reef + $\dot{e}$

4. RESULTS AND DISCUSSION

A. Demography

Age

Table I show the age of fishermen. Based on Table I, number of fishermen is higher when the fishermen is old. At age below than 30 that show number of fishermen is 35 fishermen. It is found that younger people normally are not interested to involve in fisheries sector. This number of fishermen will increase if the age increase.

According [7] age are one of factor that will influence the choice of location to catch fish. Normally when ages of fishermen more than 40 years and have more experience in fishery sector will choose strategy location to get more catch. Compare to new fishermen, to choose the strategy location is very difficult. For get more catch, the fishermen must use technology like sonar to know the strategy location.

Age and experience are related each other. When the age of fishermen is more than 40 years, experience of fishermen also high. Fishermen with more experience will know strategy location to catch fish, will help fishermen avoid from not strategy location that can give damage to the net, and fishermen can measure the location for make sure the fuel enough for the fishing trip. This will help fishermen increase catch without increase the cost.

Table II show the experience of the respondent. From the table, majority fishermen has experience around 16 years to 20 years. This is because age of respondents majority from 50 years and above. This give the effect to the fishermen's experience. When age of fishermen is high, tendency experience is also high. For experience more than 20 years show that 41 respondents are include. Total 42 of fishermen has experience around 11 years to 16 years and for experience less than 10 years total respondent are 35 fishermen.

TABLE I: AGE

Area	Age of fishermen					
	<30	31-39	41-49	51-59	>60	Total
Kuala Kedah	17	18	6	21	24	86
Pulau Langkawi	18	23	33	30	19	123
Total	35	41	39	51	43	209

TABLE II: EXPERIENCE

Area	Experience			
	<10	11-15	16-20	>21
Kuala Kedah	17	19	26	24
Pulau Langkawi	18	23	52	30
Total	35	42	78	54

Education

Education is an important asset of humanity. This assets can demonstrate the true quality of life of fishermen in terms of income. Through education, illiteracy rate among fishermen can be reduced. In addition to decrease illiteracy rates, fishermen are also not required to inherit employment as fishermen. This is due to the high illiteracy rate that fishermen children tend to inherit the job.

The level of fisherman's education and fisherman's children, the level of fisherman's skill and the level of satisfaction of education received by fisherman children is the subject of the study. Through this level of education, fisherman's quality of life can be measured whether or not there is a change. Figure I shows the level of education received by fishermen. Based on the study, most fishermen received education up to the lower secondary (124 fishermen). This is due to the number of fishermen aged 30 to 40 years more than other fishermen. Fishermen aged from 30 to 40 years old tend to graduate from low to upper secondary.

Most of these fishermen choose to finish school early and involve to fishery sector due to poverty. The main reason to finish school early are to help families to get extra income by working as fishermen. This also causes other friends to be affected and take the same steps. The poverty factor encourages fishermen to follow family members to catch fish for family income. This factor also encourages students to finish their studies early by reason it will burden the parents with tuition fees.

From Figure I, it shown the number of uneducated respondent. Total of 16 respondent are fail to get access to school because of poverty. Total 46 fishermen are finished school at primary level, 79 of respondent finished at lower secondary level, 60 of respondent finished at upper primary and eight of respondent are success to finish their education at college or university level.
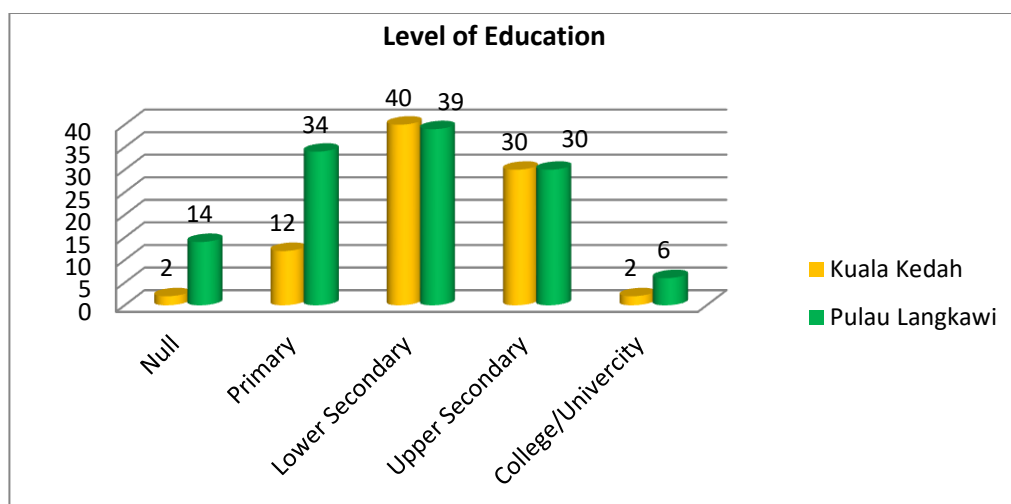

FIGURE 1: EDUCATION

B. Regression Analysis

Table 3 show the result of regression analysis for income of fishermen. From the table show that non fishery income give the impacts for fishermen income. The table below shows the effect of these factors on the fishermen in two areas. For Kuala Kedah eight from 11 variables are significant, and for Pulau Langkawi, nine from 11 variables are significant.

The other job carried out by fishermen and households is doing business, like selling fish in the farmer's market or night market, food and also fishery products. Some fishermen also do the part time job that not related with fisheries sector such as constructions and farm.

Non-fishery income also showed significant value at the 0.01 level of significance for both area. This is because other income will make income of fishermen increase, and it will effect to the quality of fishermen's life.

Based on the analysis conducted by the non-fishermen's non-fishery unit (NFI) changes, the probability that fishermen will earn more than RM1001 is 1.439. This result support by [8] which stated that low income groups tend to do other jobs to increase their income and quality of life.

TABLE III: REGRESSION ANALYSIS

Area	Kuala Kedah		Pulau Langkawi	
Variables	Parameter	Significant	Parameter	Significant
Constant	1.360	0.089	1.791	0.001
Non-fishery income	0.058	***0.000	0.039	***0.000
No of child	0.003	0.858	-0.043	0.111
Experience	0.239	**0.047	0.337	***0.000
Seasons	-0.155	***0.008	-0.078	**0.022
Status	-0.024	0.643	0.019	0.593
Skill	-0.175	0.236	0.036	0.346
Share	-0.149	***0.005	-0.156	**0.033
Role	0.177	**0.046	0.132	**0.017
No of fishing	-0.333	0.364	-0.153	**0.030
Equipment	0.017	0.344	0.047	0.352
Cost	-0.128	**0.034	-0.598	***0.000
Help	0.042	0.696	0.086	0.327
Age	0.002	*0.086	0.043	***0.008
Education	-0.132	0.196	-0.041	0.203
Artificial reef	0.194	***0.010	0.177	**0.025
	R^2 0.466		R^2=0.591	

5. CONCLUSION

The conclusion it is clear showed that non-fishery income give the impact to fishermen's income. Fishermen can increase the income through this side job. This income is an important factor that can help the fishermen to improve fisherman's quality of life. In addition to non-fishery income factors, there are other factors that affect fishermen's income. There are age, fishing and fishing skills. Fishermen's age gives the fishermen an advantage to increase fishermen's income. Experienced fishermen can determine their income level or quality of life.

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