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Strengthening of fishermen bargaining position in marketing of capture fishery catch

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Abstract Coastal Community Economic Empowerment Program (PEMP) is a national program that becomes the policy framework and reference for the implementation of various poverty reduction programs based on coastal community empowerment. The Coastal Community Economic Empowerment Program (PEMP), is started by the government since 2007. Fishermen are the main target of the PEMP program. The activities designed in the PEMP program aims to improve the welfare and employment opportunities of the fishermen, especially those who still in poor category.

This research will be carried out for two years. The purpose of this research in the first year is as follows. (1) Exploration of marketing system of fishery product to strengthen the fisherman's bargaining position in Karangasem Regency, Bali Province, and (2) To analyze the efficiency of capture fishery in Karangasem regency.

This research is a survey research. The population of this research is coastal community which become target of PEMP program. Sampling using quoted random method with sample amount 100 people. The exploration of fish catch marketing system was analyzed descriptively. The level of capture fisheries efficiency was analyzed by using Data Envelopment Analysis (DEA) approach, while the competitiveness of capture fisheries was analyzed by Policy Analysis Matrix (PAM) approach.

The results of the research indicate that (1) The institution of cooperative is the best alternative to accommodate the marketing of fishery products to strengthen the bargaining position of fishermen, (2) The efficiency of capture fishery is still low, which is influenced by the simple fishing equipment.

It is recommended that fishermen join and adhere to the principles of cooperative to further strengthen their bargaining position. Fishermen should be assured that a well-managed cooperative will be able to strengthen their bargaining position in marketing capture fisheries.

Keywords: bargaining position of fishermen, fishery catch, empowerment, economy, community, coastal area

1. INTRODUCTION

1.1. Background

Fisherman is occupation which is seen as identical to poverty. The absence of alternative jobs to earn a living, causing a person to set his choice on the job as a fisherman. In carrying out their occupations, fishermen are confronted with various limitations, including limited human resource quality, limited capital, limited access to information and business opportunities and limited ability to face the challenges of climate change and geographical area. Saad (2006) states that the causes of fisherman poverty are: 1) weak access to formal financial institutions due to debt to moneylenders, 2) lack of financial institution partiality due to tight requirements and low level of trust) 3) weakness of system and business management and 4) weak access to information on science and technology and the market.

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To stimulate fishermen in improving the underdeveloped and impoverished life, it is necessary to increase their income either by themselves or by the government. Efforts to improve life, which is more involving fishiermen communities to participate in development are better known as the principle of fishermen empowerment. The purpose of empowering fishermen is to strengthen the ability of fishermen, change the behavior of fishermen and self-organizing fishermen. The ability of fishermen that can be developed is the ability to strive, the ability to seek information, the ability to manage activities tailored to the needs or problems they face. The behavior of fishermen who need to be changed is certainly the behavior that harms the fishermen themselves or that hampers the improvement of fishermen's welfare.

Usman (1998) stated that an approach is needed to strengthen the economy of lower income fishermen communities such as: 1) a technocratic approach that starts firstly with establishing programs and target groups, followed by standardizing delivery system, for target groups, issuing implementation guidelines and technical guidelines, and providing budget to support technical implementation, and 2) a participatory approach by strengthening community self-reliance. The community is assisted, accompanied, and facilitated to perform financial problems analysis they face, give them the opportunity to decide what is desired and their initiative to be the basis of activities. The role of the government is as a facilitator and to provide initiavive support to the community.

Coastal Community Economic Empowerment Program (PEMP) is a national program that becomes the policy framework and reference for the implementation of various poverty reduction programs based on coastal community empowerment. The Coastal Community Economic Empowerment Program (PEMP) has been implemented by the government since 2007. The Government has integrated the program in the Coastal Community Economic Empowerment Program (PEMP) which is coordinated by the Director General of Marine, Coastal and Small Islands.

The fishermen group in Karangasem district is the main target of the PEMP program that began in 2007. The activities designed in the PEMP program are aimed at improving the welfare and employment of fishermen, especially those still considered poor. All phases of PEMP program implementation are based on the empowerment of fishermen to create and improve their capacity in carrying out the development from, by and for fishermen by placing fishermen as subjects, and not as objects of development (Anonymous, 2009).

Through the PEMP program the fishermen groups are given capacity building (counseling and training), strengthening access to micro credit, provided direct community assistance (BLM) in the form of capital to buy wooden boat (6 meters long) with 10 PK machine and equipped with fishing gear, as well as provided accompaniment in conducting productive business activities. There are great hopes for the implementation of the PEMP program for fishermen groups, namely the strengthening of capacities and institutions which then is expected to lead to increased income of fishermen groups so that they can get out of poverty trap.

Now, after almost 9 (nine) years of PEMP program is implemented, it still can be recorded the atmosphere of the fisherman life (target PEMP program) that is apprehensive. By naked eye it can be seen fishermen residential house buildings are not feasible for habitation, in addition it often seen some fishermen’s wives and children from Karangasem regency still live life as a beggar for a bite of rice. This factual condition shows that the fisherman has not been able to get out of the poverty trap that twisted them. Many problems are still familiar to the fisherman’s daily life.

It is undeniable that the PEMP program has been able to improve the yield of capture fisheries. Thanks to the help of nets and boat with the 10 PK engine as the implementation of PEMP program, fishermen have succeeded in increasing the catch. However, the fishermen group has not enjoyed the added value of the increase of the catching fishery results. The problem is the weak bargaining position of fishermen in the marketing of fishery products. Moreover, when the fish season comes, the price of

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capture fishery goes down drastically, resulting in the abundance of fish catch, does not provide a significant increase in fisherman income.

Based on the factual condition of the fishermen's life which is the target of the PEMP program, it is necessary to study the strengthening of the bargaining position of fishermen in the marketing of fishery products in the framework of Coastal Community Economic Empowerment Program.

1.2 The purposes of research

The research purposes are:

(1) To explore the marketing system of fishery products to strengthen the bargaining position of fishermen in Karangasem Regency, Bali Province.
(2) To analyze the efficiency of fishery fishermen fishermen in Karangasem regency.

RESEARCH METHODOLOGY

2.1. Research Location

This research will be conducted in Kubu and Karangasem Subdistricts, Karangasem Regency, Bali Province. The selection of the location of this study was deliberately based on the consideration that (1) Kubu and Karangasem sub-districts were the main target of PEMP program in Karangasem Regency, Bali Province since 2007, (2) Fishermen Groups in Kubu and Karangasem Sub-district of Karangasem Regency has established institutional and has obtained sustainable development in the form of Coastal Community Economic Empowerment Program.

2.2. Population and Sample

The population in this study are all members of fishermen group that became the target of PEMP program since 2007 in Kubu and Karangasem sub-districts joined in 20 groups of fishermen with the number of members 200 people. Sampling was conducted by quoted random method with 50 respondents in Karangasem Sub-district and 50 people in Kubu Sub-district.

2.3.Data Collection Method

In this study data collection was conducted using survey methods through direct interviews with respondents using a list of questions that have been prepared previously.

2.4 Research Variable

The variables in this research are dependent variable that is capture fishery yield (Y), and independent variable which include (1) amount of fuel (X1), (2) net area (X2), total supply (X3), long sail (X4) , and the amount of labor (X5).

2.5. Variable Operationalisation

The variables involved in this study were measured as follows:

1) Capture fishery results are expressed in kg, is the catch in a single trip.
2) The amount of fuel is the amount of diesel spent in a single trip expressed in liters.
3) The net area is the net area used in fishing is expressed in m2.
4) The amount of supplies is the value of food and drinks and cigarettes spent during fishing is expressed in rupiah.
5) The length of sailing is the time spent in a single fishing trip expressed in hours.
6) The number of laborers is the number of laborers involved in a single trip expressed within the working day.

2.6. Data Analysis Method

The exploration of marketing model of fishery product was analyzed descriptively. The efficiency of capture fisheries was analyzed using data envelopment analysis (DEA). The competitiveness of capture fisheries is analyzed by Policy Analysis Matrix (PAM) approach.

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RESULTS AND DISCUSSION

3.1 Exploration of Capture Fisheries Marketing System.

The fishery product marketing system that has been done by fishermen in Karangasem District is direct marketing when they land from the sea. The intermediary traders have been waiting at fishermen base (Ujung beach, Jasi beach, Pasir Putih beach) to buy fisherman catch. Fishermen generally do not have an alternative to market the fishery products except selling them with collecting merchants. This is in accordance with the opinion of Lubis et al., (2012), which states that fishermen are more tied to the owners of capital or merchant collectors in marketing their catch fish. Limited capital and fish landing that is generally done at night also become the factors causing the reluctance of fisherman sell fish directly to TPI.

Groups of fishermen that have been established are helpless in playing a role to assist its members in marketing the yield of capture fisheries. Individualistic impression is very strong detected in the marketing system of capture fisheries, because every individual seems to be competing to get cash immediately from the catch. There is no synergistic effort in the marketing of capture fishery products to strengthen the bargaining position of fishermen, and even implied contestation between individuals who precisely weakening the bargaining position among them. The weakness of capital is the cause of the fisherman's trapping in the created system, as Sinulingga (2011) states that the middlemen in certain conditions have created the monopoly system because they operate from financial provision, ownership of production factors, and determine the marketing path.

To strengthen the bargaining position of fishermen, then through deep exploration and observation can be identified more competitive fishing marketing system results as described in the following exposure.

(1) Marketing fresh fish through the group

The group established a marketing organization that then assigned marketing staff to sell the catch of fishermen to various market segments. Groups can play an active role in educating their members so as not to get caught in the monopsony market. The group's role is very important in strengthening the bargaining position of the fishermen so that they obtain competitive prices.

(2) Marketing fresh fish through cooperative.

Fishermen can form cooperatives to specifically engage in the marketing of capture fisheries. Cooperatives can also serve the needs of capital for its members so as not to be trapped by the middlemen in marketing the catch. Cooperatives can make breakthroughs in the marketing of capture fisheries, for example through the purchase of cold storage capable of storing large quantities of catches to be marketed when the selling price improves. Cooperatives can establish partnerships with various stakeholders so that the catch has a certainty of selling prices and fishermen get added value.

Cooperatives can expand their wings by processing fish catches or can export. Processing of catching fishery product is aimed to overcome the weakness of fishery product that is easy to decay so that it can be stored longer to obtain the competitive selling price.

(3) Marketing fresh fish through partnership with culinary entrepreneurs

Fishermen who are not incorporated in a cooperative or group can assign family members to establish partnerships with culinary entrepreneurs. Through partnerships, then when the fish season, the fishermen can enjoy the added value of the catch. Fishermen are required to maintain continuity of supply so that the continuity of the partnership is maintained.

(4) Marketing of post-cooling catches

Fishermen can independently purchase refrigerators to temporarily store their catch, before being sold to buyers.

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(5) Marketing of post-processing catches.
Fishermen can independently perform the processing of their catch by referring to consumer preferences.

3.2 Capture Fisheries Efficiency

To support the DEA analysis in order to assess the efficiency of capture fishery, it is also used to analyze the production function to know the effect of production factor on the production level of capture fishery. The results of capture fisheries production using Cobb-Douglas type production function are presented in Table 1. In Table 1 it can be seen that the number of labor, the amount of fuel, the width of the jarring, and the duration of going to the sea has a significant effect on the catch. The coefficient of determination (R2) is obtained at 0.8746. This number means that 87.46% of the dependent variable variation (Y) can be explained together by the independent variable (Xi), and the remaining 12.54% is explained by other factors not included in the model. The result of variance analysis (F-hitung) shows that together independent variable (Xi) have real effect on the dependent variable (Y).

Tabel 1. Result of Regression Analysis of Capture Fishery.

Variable	Coefisien	Std. deviation	t-count	P-Value
Constants	1,8984	0,0679	27,9588	5,113E-128
Amount of labor (X1)	0,2724	0,0321	8,4859	3,7549E-07
Amount of fuel (X2)	0,2126	0,0507	4,1932	0,0001
The large of nets (X3)	0,3117	0,0413	7,5363	9,3255E-16
Duration of going to sea (X4)	0,1987	0,0513	3,8733	0,0031
Captain experience (X5)	-0,0259	0,0152	1.7039	0,3380
$R^2 = 0,8746$	F = 479,1738	Sig. F = 8,3483E-108		

Source : Primary data analysis

The result of F-count analysis and the significant coefficient of determination followed by empirical-t on significant regression coefficients (regression coefficient of labor quantity, amount of fuel, net large, duration of goingto sea) shows that the model can be used as a good estimator.

Based on Table 1 it can be formrd capture fishery production functions as follows:

$$\mathbf{Y = 79,1407\ X_1^{0,2724} X_2^{0,2126} X_3^{0,3117}\ X_4^{0,1987}\ X_5^{-0,0259}}$$

based on the capture fishery production function, it can be explained things as follows:

1) The variable of labor force (X1) has a coefficient of elasticity of 0.2724, this figure means that every increase of labor input use by 1%, will increase the production of capture fishery by 0,2724%.
2) The fuel quantity variable (X2) has a coefficient of elasticity of 0.2126, this figure means that any increase in fuel input use by 1%, will increase the fish catch by 0.2126%.
3) The net large variables (X3) have a coefficient of elasticity of 0.3117, this figure means that any increase in net usage by 1%, will increase fish catch by 0.3117%.
4) Variabel lama melaut (X4) memiliki koefisien elastisitas sebesar 0,1987, angka ini member makna bahwa setiap peningkatan lama melaut 1%, akan meningkatkan hasil tangkapan ikan sebesar 0,1987%.

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5) The variable of duration of going to sea (X4) has a coefficient of elasticity of 0.1987, this number means that every 1% increase in duration of going to sea, will increase fish catch by 0.1987%.
6) Variabel pengalaman sebagai nahkoda (X5) memiliki koefisien elastisitas sebesar -0,0139. Variabel ini tidak berpengaruh nyata terhadap variabel terikat (hasil tangkapan ikan (Y)).
7) The variable of experience as a captain (X5) has a coefficient of elasticity of -0.0139. This variable has no significant effect on the dependent variable (fish catch (Y)).

Based on the capture fisheries production function, it is identified that the large of the jarring variables has the greatest coefficient of elasticity. Thus, the net width variables give the greatest influence on the catch. The amount of fish catch depends on the large of the net used.

The efficiency index or technical coefficient of the capture fisheries production function is 101.8984 or equal to 79.1407. According to Debertin (1986) the technical coefficients of the Cobb-Douglas type production function reflect the level of technology applied in production. Thus the relatively low technical coefficients in the production function give meaning that the level of technology applied in capture fishery business is relatively low. The fishermen use only a limited fishing gear with the use of a 5 pk machine that has not been able to reach the roaming area for wider fishing.

DEA analysis results show that the scale of fishery catch fisherman group efficiency in Kabupaten Karangasem is 0.74, which means 26% inefficiency. This figure means that fishermen can reduce their production costs by 26%, and are still at the same level of output. Simple fishing equipment factor, which is outboard boat with 5 pk engine and makeshift net becomes the cause of low efficiency. In addition, the magnitude of uncertainty is thought to be the cause of this, since fishermen operating in open access areas compete closely to obtain fish, their existance even become unclear. When there is a fish season, the catch is abundant, and when the seasons change, the fishermen rarely get fish so that the catch is low even nil.

CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusion

1) Cooperatives institution to be the best alternative in accommodating the marketing of fishery products to strengthen the fishing bargaining position.
2) The efficiency of capture fisheries is still low, which is influenced by simple fishing equipment.

4.2 Recomendations

It is recommended that fishermen join and adhere to the principles of cooperatives to further strengthen their bargaining position. Fishermen should be assured that a well-managed cooperative will be able to strengthen its bargaining position in marketing capture fisheries.

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