The influence of women’s leadership in the fishery and cleaner production of fish processing industry on the effectiveness of coastal preservation program in Tangerang

Y H Sipahutar\textsuperscript{1,2*}, H Rahmayanti\textsuperscript{1}, R Achmad\textsuperscript{1}, M R Suryanto\textsuperscript{2}, R R Ramandeka\textsuperscript{2}, M R Syalim\textsuperscript{2}, R B Pratama\textsuperscript{2}, A N Rahmi\textsuperscript{2}, P Astrianti\textsuperscript{2} and G Mila\textsuperscript{2}

\textsuperscript{1}Department of Environmental Management, Universitas Negeri Jakarta, Jakarta, Indonesia
\textsuperscript{2}Jakarta Fisheris University, Jakarta, Indonesia
\textsuperscript{*}E-mail: yuliati.sipahutar@gmail.com

Abstract. This research was aimed to investigate the effect of the leadership fisherwomen and cleaner production of the fish processing industry on the effectiveness of environmental coastal preservation in Tangerang District. The research was conducted by survey method and analyzed using Path Analysis (PA). Sampling was done by proportional random sampling. Data sources were obtained from primary data by distributing questionnaires. The results showed that the leadership of fisherwomen had a significant influence on the effectiveness of effort to preserve the coast with a value of 0.420>0.005. Cleaner production in the fish processing industry, was significant effect to work leadership fisherwomen on the effectiveness of coastal preservation with a value of 0.361>0.005. The leadership of fisherwomen together with the cleaner production of fish processing industry had a significant simultaneous effect on the effectiveness of preserving the coastal environment (P<0.05). The value of R square obtained was 52.3%, meaning that the work effectiveness variable preserving the coastal environment can be explain 52.3% by the leadership variable and the clean production environment of fish processing industry while the remaining 47.7% can be explain by other unexamined variables.

Keywords: cleaner production, effectiveness, fisherwomen, leadership

1. Introduction

Neglected coastal development and lack of attention have caused coastal villages to be faced with four main problems, namely high levels of poverty in coastal communities, damage to coastal resources, low independence of village community organizations and lack of infrastructure and environmental health (Imron 2001). The problem that occurs in the coastal environment at the present time is the decrease in the power of the physical environment is inversely due to the increase in the number of human populations and the use of technology that is not environmentally wise. Coastal pollution is the entry or inclusion of living things, energy substances, and/or other components into the coastal environment due to the activities of each person, so that the quality of the coast falls to a certain level...
which causes the coastal environment not to function according as it should be (UU No 32 2009). The common environmental impact as a result of the activity of the salted processing industry is the liquid waste produced from the washing and weeding process and soaking fish with salt. Unproperly managed liquid waste is one of the causes of declining environmental quality.

Fishermen are people whose livelihoods are fishing. Fishermen's woman works with the main motivation to seek additional income in an effort to meet household needs. Fishermen communities are groups of people whose livelihoods are marine products and live in coastal or coastal villages (Kusnadi 2009). Fishermen look for fish in the sea and sell their products, while women do fish processing (salted fish, boiled fish and shrimp paste). Large fishing business units are managed by men, but on the contrary small business units are managed by women as a form of their strategy for survival.

The life of a coastal woman or a fisherman woman is generally dominated by collecting shells, processing fish, trawler cleaners (fishing gear in the form of nets), nener collectors, workers in frozen shrimp storage, net makers, retail fish traders, intermediary traders and stall owners. Nurlaili and Muhartono (2018) states that the strategic role of women in each stage of the fisheries business, especially in the fish processing process, makes coastal women the main actor of development programs. Seeing the large role of women in fisheries business activities, it must be empowered and motivated in every coastal environment management program. The role of fisherwoman as a mother is very important in conveying information about the sustainable use of natural resources to the young generation. The role of the leader in the group of fisherwoman is to direct, guide, to do clean production in the fish processing.

Leadership can be said as a way of a leader in directing, encouraging, and managing all the elements in the group or organization. The leader is able to act as a catalyst if the leader is able to increase the use of all available human resources, try to react to give enthusiasm that gives enthusiasm, fast work power, carrier of change, always maximum and appears as a pioneer (Robbins 1997). An effective leader will always look for better ways. A person can become a successful leader if he believes in sustainable growth, increased efficiency and continued success of the organization that he leads to achieve the expected goals.

Clean production is carried out in industrial activity for the purpose of efficiency and increase in profits while maintaining environmental sustainability. The liquid waste produced from the processing of salted fish is still unresolved. Cleaner production is the adoption of a sustainable, integrated and preventive environmental strategy for processes, products, and services (Pudjiastuti 1999). Clean production is a preventive and integrated environmental management strategy that needs to be applied continuously to the production process and product life cycle with the aim of reducing risks to humans and the environment (UNEP1991). According to Afmar (1998) clean production must be focused on efforts to prevent waste generation. The effort is source reduction, reduction waste reduction and utilization of waste through recycling.

Effectiveness is one of the achievements that an organization wants to achieve. Effectiveness is a basic element to achieve a goal or target that has been determined in every organization (Miles 1980). The effectiveness is a measurement which goals such as quantity, quality, time have been achieved. Work effectiveness is a measure for achievement of the predetermined task or goal. Effectiveness can be interpreted in general, that is the level of achievement of organizational goals. resources rationally to achieve goals. Organizational effectiveness is caused by group effectiveness which is also caused by the effectiveness of group members (individuals). According to Mullins (2007) in general the factors that influence the effectiveness of an organization are (1) leadership, (2) relationships between groups, (3) work motivation, (4) ability to manage organizations, (5) systems and procedures, and (6)
work environment. Effectiveness emphasizes more on the aspects of the objectives of an organization, so if an organization has succeeded in achieving the goals set, it can be said to have achieved effectiveness.

1.1. Hypothesis

1) Leadership fisherwoman (X1) directly affects the work effectiveness in coastal conservation by fisherwoman (X3).
2) Clean production (X2) directly affects the work effectiveness in coastal conservation by fisherwoman (X3).
3) (X1) directly affects the work effectiveness in coastal conservation by women in the fishing industry, (X3) through work motivation, and (X2) Cleaner production environment.

2. Methods

This research was conducted in Tangerang Regency, Banten Province, from May to October 2017. This research was explanatory research with a quantitative approach. The sampling technique used was proportional random sampling by determining the number of samples using the Slovin formula and obtained a sample of 90 respondents. Data sources were obtained from primary data by distributing questionnaires and secondary data with documentation.

Data collecting used proportional random sampling to 90 respondents from a total population of 2,298 fisherwomen in the fish processing industry. The data analysis technique used in this study is PA. This analysis is preceded by a normality test and a variance homogeneity test. Then calculated the direct and indirect effects of the independent variables on the dependent variable.

![Figure 1. Analysis model: leadership (X1), clean production (X2) effectiveness of mothers in preserving the coastal environment.](image)

3. Results and discussion

Data collection was carried out through surveys using a questionnaire as an instrument. The data consisted of 90 respondents, who were selected as samples. In the discussion, the variables of each description are stated, which includes calculating the average score, median, mode, standard deviation, variance, and score distribution in the form of a frequency distribution table 1.

The clean production score is obtained from the 90 respondents who answers 40 questions questionnaire, while leadership scores were obtained from the 28 question questionnaire. The
effectiveness score by fisherwoman in preserving the coastal environment was obtained from 31 questions questionnaire.

### 3.1. Path coefficient analysis

The hypothesis testing to find out the effect of leadership (X1), clean production (X2), and the effectiveness of preserving the coastal environment (X3). From the table 2 can be concluded that the p-value for the leadership variable (X1) was 0.000 and the t value is 4.13. Because the p-value was (0.000<0.05) and the value of t count (4.13) was greater than t table (1.99) then H0 is rejected. It’s known that the variable leadership of fisherwoman(X1) and the net production of the processing industry together provide a positive influence on the effectiveness of preserving the coastal environment (X3).

| Model          | Unstandardized Coefficients | Standardized Coefficients | t     | Sig.  |
|----------------|-----------------------------|---------------------------|-------|-------|
| (Constant)     | B                           | Std. Error                | Beta  |       |
|                | 36.98                       | 4.70                      | 7.87  | 0.000 |
| 1              | Leadership                  | 0.34                      | 0.42  | 4.13  | 0.000 |
|                | Clean production            | 0.26                      | 0.36  | 3.54  | 0.001 |

The p-value for the net production environment variable (X2) is 0.000 and the value of t count was 3.55. Because the p-value was (0.000)<0.05 and the value of t count (3.55) were greater than t table (1.99) then H0 was rejected. It means that the clean production environment (X2) had a partial significant effect on effectiveness of preserving the coastal environment (X3).

According to the table above, the path equation can be obtained:

\[ X3 = 0.42 X1 + 0.36 X2 + 0.48 \] (1)
The path coefficient value from the equation above, can be concluded that the leadership variable of fisherwoman as mothers 0.42 (X1) is greater than the Net Production in the fish processing industry 0.36 (X2). Which means the leadership of fisherwoman as mothers (X1) has a greater influence on the effectiveness of preserving the coastal environment (X3) than the net production in the processing industry (X2) both simultaneously and partially.

Cleaner production has a partially significant effect on increasing the effectiveness of preserving the coastal environment in the fish processing industry with value. 0.36>0.005. In table 2 it can be seen that the net production of the fish processing industry has a significant effect partially on increasing the effectiveness of preserving the deep coastal environment with a value of 0.001>0.005. It means that an increase in net production will lead to an increase in the effectiveness of preserving the coastal environment in the fish processing industry. It can be said that the net production (X2) has a partially significant effect on the effectiveness of preserving the coastal environment.

The leadership of fisherwoman together with the clean production, had a significant simultaneous effect on increasing the effectiveness of preserving the coastal environment in the fish processing industry with a P<0.05. The overall results of the data analysts provide clues that the leadership role has a significant influence on performance in the district office.

**Table 3. Model Summary of X1, X2 and X3.**

| Model | R  | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|----|----------|-------------------|---------------------------|
| 1     | 0.72* | 0.52     | 0.51              | 9.25                      |

* Predictors: (Constant), Environment, clean production, leadership

The R Square value obtained is 52.3%, meaning that the variable Increasing Effectiveness of preserving the coastal environment can be explained by 52.3% by leadership and work motivation variables, while the remaining 47.7% can be explained by other variables not examined. The path coefficient results show that leadership and clean production have a greater effect on increasing the effectiveness of preserving the coastal environment, both directly and indirectly.

The variable leadership of fisherwoman as a mothers and the net production of processing industries together provide a positive influence on the effectiveness of preserving the coastal environment. Good leadership by fisherwoman and conducting clean production in the fish processing industry process will provide good environmental preservation goals. The results of this study are in accordance with the opinion (Nazir 1985) which states that leadership as a process affects the activities of individual groups to achieve certain goals. Leadership variable is very important in management because with the management process, the organization will run well.

In the processing of fishery products processing, the role of fisherwomanleaders on the Jakarta bay coast is to motivate its members to play a full role in the processing to marketing (Nurlaili and Muhartono 2018). Furthermore, (Kusnadi 2009) stated that coastal women are a capital of development with sufficient potential to be utilized. Coastal women contribute to family economic activities. The leadership of the fish processing fisherwoman as a mother is a capability of a group leader in carrying out his actions to influence her members in order to achieve common goals. Istiana (2014) states that efforts are needed for women empowerment of fishermen women so that fisherwoman have the leadership ability to develop their potential to the fullest.

Cleaner production is an environmental management strategy to avoid industrial pollution through waste reduction (Muliani and Ujianti 2017). Cleaner production is an environmental management strategy that is directed towards prevention and is integrated so that it can be applied to the entire
production cycle (Hermanuadi 2017). Clean production which is applied continuously in the production process and product life cycle is prevented and integrated with the aim of reducing risks to humans and the environment. An important approach in waste minimization is to use cleaner production processes in the production process. Research result Yuwono and Susetyo (2017) stated that the application of cleaner production is proven to increase productivity and increase sales value, which based on the results of the calculation of waste that has economic value can increase the value of product sales from stingray fish activities. Hasibuan (2000) showed that the inhibiting factor in the implementation of cleaner production is the company's strategic policy. Another interesting phenomenon is the culture of clean production which has not yet been formed at the level of the company. The professional environmental management team has not yet provided a significant role for the acceptance and application of cleaner production in the company.

One of the functions of effectiveness is the achievement of appropriate goals carried out by directing group members towards the achievement of organizational goals. The effectiveness of efforts to preserve the coastal environment by fish processing women is the goal of the group of fisherwoman. Effectiveness is a measure of the achievement of a task or goal. The effectiveness of women's leadership in careers can be interpreted as leadership in development orientation work in balancing with responsibility of the organization and the household. Increasing the ability and skills of fishing communities to be able to utilize coastal marine resources, along with efforts to increase community participation in preserving the functions of marine resources as a buffer for life in the region (Yenida and Sumiarti 2016).

4. Conclusion

Leadership has a direct and positive effect on effectiveness in preserving the coastal environment. Clean production has a direct and positive effect on effectiveness in preserving the coastal environment. Leadership and shared cleaner production have a direct influence on effectiveness in preserving the coastal environment.

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