

MEASURING ENVIRONMENTAL AWARENESS AMONG ARTISANAL FISHERS IN MANJUNG DISTRICT TO FACILITATE ACTIVE PARTICIPATION IN ENVIRONMENTAL CO-MANAGEMENT

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I. Introduction

Currently, some of the major problems faced by local artisanal fishermen are due to their lack of understanding and awareness of the environment as well as environmental and resource management. Although the government has initiated several fishery co-management programs, progress is slow and the fishers' participation is not very encouraging due to their lack of awareness. Poor environmental awareness and knowledge of marine ecosystems has led to poor, unsuitable or destructive fishing that eventually caused negative impacts on the marine ecosystems and fisheries. Fishermen will normally blame their predicament on external factors. The fishers never acknowledge that their lack of environmental awareness is also detrimental to environmental degradation and declining fish stock.

There is also lack of the fishers' involvement in fisheries co-management efforts in Malaysia, which still in its introductory phase. Restrictive and unresponsive fishery and environmental management systems and policies, imposed top-down by the authorities is also a problem. Little or insufficient efforts were taken to involve the fishers. They have little or no input, and insufficient attention has not been given to the perceptions, attitudes or knowledge of the locals.

II. Research Objectives

The study will focus on the measurement of environmental awareness of artisanal fishermen in Manjung District. The specific objectives of the proposed research are:

- a. To measure and identify the level and sources of environmental awareness among the artisanal fishermen
- b. To analyze the perceptions of artisanal fishermen on the main functions of the relevant institutional regimes on environmental management
- c. To identify the level of artisanal fishermen's involvement in environmental co-management practices
- d. To propose recommendations to improve environmental awareness of artisanal fishermen towards effective participation in environmental co-management programs
- e. to strengthen the policy, rules and regulations of the local artisanal fishery industry

III. Research Methodology

This chapter will present the research methodology to be implemented and will be divided into **several** parts. This research will be conducted on coastal artisanal fishers in the Manjung District. Based on the 2008 Manjung District Fisheries Department Annual Report (2008) there are 696 licensed artisanal coastal fishers in the study area, spread over two administrative zones, North Manjung and South Manjung. They consist of fishers using sampans with or without outboard engines and traditional fishing boat with internal engine. A sample of 208 respondents will be identified randomly from this population and these will represent 30 percent of the total population (based on the 2007 Manjung District Department of Fisheries Report), sufficient to produce acceptable results (Roscoe, xxxx). Samples will be identified with the assistance of the local fishermen associations:

1. Persatuan Nelayan Kawasan Manjung Selatan
2. Persatuan Nelayan Kawasan Manjung Utara
3. Persatuan Nelayan Kawasan Pulau Pangkor
4. Syarikat Kerjasama Nelayan Bagan Baru
5. Syarikat Kerjasama Nelayan Bagan Lama
6. Syarikat Kerjasama Nelayan Pulau Pangkor
7. Marine Product Association
8. Kesatuan Pekerja-Pekerja Perikanan Pulau Pangkor

Research Questions

From earlier preliminary informal/casual interviews and literature review, this researcher was able to explore and focus several concepts and principles of environmental awareness and artisanal fisheries. Eventually, the researcher was able to focus on the following set of research questions:

- a) Who are involved in artisanal fisheries?
- b) What is the level of environmental awareness among artisanal fishers?
- c) What are the fishers' sources of environmental knowledge?
- d) Who are responsible to educate the fishers about the environment?
- e) What are the fishers' perceptions on the main functions of the relevant institutional regimes on environmental management?
- f) What are the fishers' knowledge on and willingness to participate in co-management programs?

To help answering the above questions the researcher will use multiple data sources such as surveys, archival and report searches and site visits. The main data collection instrument to be used during the survey would be the face-to-face structured and semi-structured interview with the aid of a prepared open and closed-ended survey questionnaire forms (Henerson et al., 1987; Singleton Jr. et al., 1993, Sharifah et al., 2005). Even though this approach would be expensive and time-consuming, getting back all and fully completed questionnaires would be the advantage to the researcher (Sulaiman, 2004).

Primary data would be collected through direct face-to-face interview with the fishers. The interviews will be conducted in Bahasa Malaysia. Flash cards would be prepared and read to the respondents to explain to them some of the terminologies they might not understand. The questionnaires are designed into several components: socio-demographic and economic background; fishers' level of environmental awareness and sources of environmental knowledge; their attitude, knowledge and self-reported environmental behavior; their perceptions towards relevant institutional regimes on environmental management (based on Sharifah et al., 2005). The questionnaire will also seek to establish the fishers' knowledge on and willingness to participate in co-management programs. Surveys will be conducted at selected fish landing jetties registered under the Manjung District Fishery Department. Some secondary data and probably tertiary data would also be included. Respondents' responses will be recorded using a Likert-type five-point scales (completely disagree to completely agree) on environmental-related questions.

Analytically, this research will employ a quantitative and descriptive approach. It would involve both the qualitative and quantitative data (Sulaiman, 2004). Data obtained from the surveys will be analyzed using statistical procedures executed by suitable data analysis software available such as the SPSS.

VI. Result and Discussion

1. environmental knowledge and awareness among the artisanal fishers are relatively low due to lack of information and environmental educational program
2. artisanal fishers are not effectively involved in coastal co-management program or during policy formulation process
3. understanding/knowledge on policy and regulations are quite low and therefore, fishers participation in resource management programs are low
4. centrally-based, top-down management is not effective, therefore there is a need to empower the public at the regional and local level

V. Significance of findings

- will identify the level of environmental and attitudes awareness, as well as the perceptions among artisanal fishers on the main functions of the relevant institutional regimes on environmental management. Therefore, the relevant authorities can find and formulate program that will help increase their understanding of the environment
 - findings will also identify the major sources of environmental knowledge and awareness. This will assist the authorities to ensure that the fishers will receive the right information

- can assist related authorities to identify and formulate suitable strategies, approaches and programs to improve the environmental awareness, knowledge and capabilities among artisanal fishers according to their awareness levels
- can encourage direct active participation of local artisanal fishermen in environmental (coastal) and fisheries co-management programs