Study on market system of reef-associated seafood in Lingayen Gulf, Philippines

Doctoral Dissertation Summary

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論文題目 Title	STUDY ON MARKET SYSTEM OF REEF-ASSOCIATED SEAFOOD IN LINGAYEN GULF, PHILIPPINES		

Dissertation research topics:

I. Marketing of reef-associated seafood in Lingayen Gulf

II. Availability of and consumer preferences for traded reef-associated seafood

III. Problems and opportunities in the marketing of reef-associated seafood

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Purpose:

The comprehensive study on the market system of reef-associated seafood in Lingayen Gulf, Philippines presented in this dissertation had the following purpose:

I. To determine and describe the current market flow, marketing practices, and key market players involved in marketing reef-associated seafood in Lingayen Gulf.

II. To identify the composition of currently traded reef-associated seafood and consumer preferences.

III. To identify the current problems and opportunities in the marketing of reef-associated seafood.

Methods:

I. Interview survey using semi-structured questionnaire was used to collect data in the coastal municipalities of Anda and Bolinao and cities of Alaminos and San Fernando in Lingayen Gulf, Philippines. A total of 138 fishers, 31 local traders and 13 hotel employees were interviewed as key respondents. Data were collected from November–December 2017 and April–May 2018. A descriptive analysis was used to illustrate the typical market flow, marketing practices and key players involved in marketing reef-associated seafood.

II. A part of the survey questionnaire was developed to obtain information about the catch composition, estimated quantities, and prices of marketed reef-associated seafood from fishers and local traders. The local names of reef-associated fish and invertebrates were translated to common English and scientific family names with the assistance of an experienced local researcher. Data obtained from the survey were processed and analyzed using Statistical Package for the Social Sciences (SPSS) software 16.0. Percentages of fish and invertebrates were cross tabulated with different market agent categories. A two-way analysis of variance (ANOVA) was performed to determine the influence of the major fish and invertebrates and market agent category on the average prices obtained. Tukey's post hoc test was used to examine the differences in prices and market agent categories.

III. The interview survey was complemented with focused group discussions, market, and field observations to validate information gathered from key respondents and to identify current problems and opportunities in marketing reef-associated seafood. Focused group discussions were conducted with various stakeholders in each study site. Market observations were conducted during market days, and field observations at landing sites were conducted twice a week.

Results:

I.   The current market flow of reef-associated seafood involves various market agents. The three primary market agents are local traders (locally known as *kumprador*), ambulant vendors (locally known as *kadaw*) and market vendors (locally known as *tindera*). These market agents are dominantly represented by women. Secondary market agents, including hotels and restaurants, were also identified. Reef-associated seafood are largely sold fresh while small portion are intended for home consumption. Fishers are mainly paid in cash while some accept rice whereas in cases of fishers' existing loan balances from local traders, their daily catch serve as installment payment. The *suki* system (patron-client relationship) is a prevalent method of marketing between fishers and local traders. The role of local traders is recognized by fishers not only for financing fishing expenses and for marketing their catch but especially during bad weather conditions and financial emergency situations.

II. A variety of reef-associated seafood are largely marketed to local consumers while selected types are highly sought by tourists. Among the major fish and invertebrates, groupers were consistently high-valued, followed by rabbitfishes, blue swimming crabs, and parrotfishes. Among the major fish, grouper and rabbitfish, command higher price when sold to tourists. Statistical analysis showed a significant difference between fisher price and tourist price, as well as between local trader price and tourist price ($P < 0.05$). However, there was no significant difference between fisher price and local trader price ($P > 0.05$). This result indicate that fishers and local traders could gain higher profits when they sell to tourists. The prices are even higher when, after value adding, reef-associated seafood are sold by hotels and restaurants. As the demand for reef-associated seafood continue to grow both for local and tourism market, the supply is declining, and considerable quantities of catch traded were observed to be undersized and thus priced low. It is worth noting that these reef-associated seafood occupy functional groups that help maintain the health of the reef ecosystem.

III. Currently, the marketing of reef-associated seafood is confronted with environmental socio-economics and governance-related problems. The major environment related problem is the declining catch due to man-made and natural causes. The main socioeconomics related problem of fishers is low or reduced income due to low prices of catch coupled with the lack of alternative livelihood and limited financial capital. Thus, their current situation drives their dependency on the *suki* system. The two main governance related problems are weak implementation of fisheries laws and poor marketing schemes. Some of the opportunities include the presence of tourists, availability and proximity to functional public markets, auxiliary services, and the existence of *suki* system. One of the highlights of this study is the potential opportunity in marketing reef-associated seafood to tourism market. However, fishers' engagement to *suki* system appears to be a barrier for them to perform direct marketing.

Conclusion:

I.   This study described the marketing of reef-associated seafood in the Lingayen Gulf. The market flow starts from the fishers and passes through multiple market players who perform the functions of bringing the seafood from the reefs to the final consumers. The primary market players are composed of various market agents and there is also a potential market from the tourism sector. The interdependence between fishers and local traders is manifested through the *suki* system.

Understanding the main characteristics of marketing could serve as basic knowledge for market development and interventions to support the market players particularly the small-scale fishers to enhance their income.

II. A diverse composition of reef-associated seafood is largely marketed to local consumers. Notably, high-valued seafood are highly sought by tourists. Higher prices of high-valued fish and invertebrates obtained from tourists could be an opportunity for fishers and small-scale traders to improve their income. However, the supply of reef-associated seafood is declining and may result to further overexploitation. Therefore, a stronger management regulation for ecologically important reef-associated seafood should be implemented.

III. Currently, the marketing of reef-associated seafood is beset with environmental (man-made and natural), socio-economics and governance-related problems. On the other hand, some opportunities that could potentially enhance income and could sustain the marketing of reef-associated seafood in general were also identified. This study could serve as a baseline information that could be useful for local governments in designing appropriate strategies and interventions for the marketing of reef-associated seafood.