EVALUATIION OF HYOGO DRIED LAVER GRADES: A HEDONIC PRICE APPROARCH

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Key Words: Laver (Nori), Hedonic Price Approach, Tobit regression, Market Research, Seto Inland Sea, Oligotrophication

1. INTRODUCTION

Laver aquaculture's production in Japan accounts for about thirty percent of total sea culture and also occupies high position in the value of production. The area along Seto Inland Sea in Hyogo prefecture is commonly known as major production area of sea laver as well as the area along the Sea of Ariake. In the past, laver aquaculture had grown by virtue of various technological innovations, but currently faces serious problems such as: the shrinking of the market and the decline of nutrient levels.

Nevertheless, there are not much knowledge or empirical studies about market and distribution of laver industry to deal with them. Moreover the studies of the association between Hyogo's laver cultivation and Seto Inland sea environment have recently begun. Thus the purpose of this study is to estimate a hedonic price function to identify market valuation of dried laver attributes which is expressed by several grades; using market data on the auction price in Hyogo, and then to discuss the relation between those auction prices and environmental change.

2. DATA AND METHODS

The data for the study comes from four years of auction data of dried laver in the Hyogo markets (2004-2007). In hedonic estimation, it is supposed that the contract price of dried laver is determined by several grades or characteristics which consist of rating, quality, auction day, cooperative (such as the production area) and winning bidder (corporation). Estimated results of parameters of laver attributes implies how large effects the effects on the attributions are. Besides tobit regression model is applied to this estimation because the price data for seaweed under 3 yen is omitted.

3. RESULTS AND DISCUSSION

Estimated results of hedonic price function suggested that the price difference between superior grade and the inferior one is practical; ¥14.3 per sheet. Therefore, producers must improve the product quality in the view of the cost-effectiveness at the processor stage.

Moreover, the estimated hedonic function could be applied to the evaluation of economic loss. Firstly, the products' damage caused by sea oligotrophy is equivalent to total ¥1.2 billion, comparing two consubstantial products (2004 and 2007). Secondly, the fishery damage caused by a vessel accident at Akashi Strait is computed as 3.4 billion yen.

4. CONCLUSIONS

The product strategy of Hyogo dried laver is designed at two view points; the processor term and the cultivation term. At the processor term, the thoroughgoing instruction would help to improve both product quality and price. This is verified with the empirical results. At the cultivation term, on the other hand, excluding half measures such as fertilization and organic acid use, longitudinal program to improve the nutrient level in Seto Inland Sea is necessary. Concretely speaking, it is the collaboration with this riparian autonomous community; the forestation in headwater area and negotiation about appropriate discharge of nutrients from sewage farms. In policymaking, the estimated hedonic price function is helpful as an indicator of sea oligotrophication. Meanwhile, these campaigns would also efficient for the product strategy of Hyogo dried laver because they are suitable for the expanding the green market.