

ECONOMIC FACTORS AFFECTING STOCK ENHANCEMENT OF SALMON IN JAPAN: DOMESTIC SALMON VERSUS IMPORTED WILD SALMON AND IMPORTED FARMED SALMON

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The development of successful technical and biological stock enhancement methods for chum salmon have increased the availability of domestic chum stocks. Although the harvest of salmon in the North Pacific decreased by economic zone in the 1980s, the harvest of domestic salmon with set net fisheries in Japan exceeded that of the offshore fishery. Traditionally, domestic salmon were salted for use in Japanese households. After the Japanese economy developed quickly in the 1970s, the demand for fresh and frozen salmon increased more than that for salted salmon because of changes in the nuclear family, change of taste to a more western style, and the development of food service industry. Marketing is the process of discovering unmet needs and creating products to meet those needs. However, the practice of market research has been difficult for the domestic salmon industry and any market information about domestic salmon has not been analyzed.

Wild salmon were imported from Alaska to Japan during the decline of the offshore fishery in the North Pacific and the wholesale price of domestic salmon decreased relative to the quantity imported. In addition, salmon aquaculture technology was established in Chile and Norway in the 1990s and farmed salmon was imported to Japan. Imported farmed salmon were welcomed by the Japanese market because it provided a constant supply of high quality, fresh fish to individuals and to the food service industry. Norway thoroughly researched the Japanese market and adjusted the supply system so that it corresponded with the demand. At the same time, the demand of domestic salmon has decreased except for salted products of salmon and salted salmon roe. In the 1990s, the demand for salmon reached a plateau in Japan and the wholesale price of domestic salmon declined because of the competitive pricing of the imported farmed salmon. The main salmon hatcheries in Japan are funded by taxes on the harvest, so the decrease in harvest and the decline of the wholesale price threatened the sustainability of the enhancement program for domestic salmon.

Recently, the global demand for marine products increased in response to outbreaks of Bovine Spongiform Encephalopathy (mad cow disease) and avian influenza. In particular, China started a new business of importing and processing Japanese domestic salmon. Because the new products have been exported from China to the European Union and the United States, exports of Japanese domestic salmon has increased since the latter half of 1990s. In 2004, 227 thousand tons of domestic salmon were landed in Japan, of which 85,000 tons were exported to China. On the other hand, 293,000 tons were imported from Chile, Norway, USA, Russia

and other countries in 2004. Consequently the supply of domestic salmon in Japan decreased by the export to China and the wholesale price of domestic salmon stabilized. However, it is necessary to find the potential demand of domestic salmon in Japanese market. Although the Japanese salmon industry developed through technological advances in stock enhancement (production of healthy fry and optimum release timing), an imbalance in the supply and demand occurred in the Japanese salmon market. We need to develop market research tools that include enhancement technology of domestic salmon. Furthermore, we need to understand the current imbalance in the supply and demand of fishery products on a global scale. Efficient use of fishery products on a global scale would have the same effect as a global production increase.