

学 位 論 文 要 旨

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題 目	ベトナム・メコンデルタにおける持続的なエビ養殖産業の実現と課題に関する研究 (A Study on the Establishment of Sustainable Shrimp Farming Industry and Its Challenges in the Mekong Delta, Vietnam)

Vietnam's shrimp farming industry emerged as a dramatic increase from the 1970s to the 1990s. The Mekong Delta is the center, accounting for 91% of the aquaculture area and 80% of production in the country. Shrimp culture has developed from a extensive systems by fishermen and a large-scale intensive systems by companies. However, both extensive and intensive aquaculture have a high risk of disease and have problems in environmental sustainability. Sustainable development cannot be expected in two this system.

Therefore, the Vietnamese government is trying to popularize integrated aquaculture as a new form of aquaculture. Integrated aquaculture refers to "mangrove shrimp" that plants mangroves in the same place and "rice shrimp" that cultivates paddy rice, and can realize stable shrimp cultivation management while ensure environmental sustainability. It is expected as the best strategy for the shrimp industry. However, its characteristics and actual management conditions are not clear. Moreover, in reality, there are many management bodies that once start integrated aquaculture but abandon it and return to the existing aquaculture form, and the future is uncertain. Therefore, in this study, we conducted a field survey of two types of integrated aquaculture, namely "mangrove shrimp" and "rice shrimp", and clarified their characteristics, actual conditions, issues, and future prospects.

The study indicates that mangrove shrimp has many advantages such as (1) acquisition of stable income opportunities through regular logging and sales of mangrove, and (2) high market evaluation as organic shrimp. However, (3) there is a restriction because the mangrove plantation area ratio must be kept above a certain level, and it is quite difficult to apply in the reality due to impact on increasing shrimp production.

Rice shrimp has the advantages of (1) high income if rice is abundant, (2) rice, which is the staple food of Vietnam, and can contribute to solving food problems, but (3) rice cannot cultivate bad weather conditions. Many issues are clear, such as the fact that income cannot be as expected, (4) the results of rice cultivation are unstable due to frequent salinity intrusion, and (5) the market evaluation as an organic shrimp/rice have not been recognized although there is no chemical use. It also presented that both can be started with low investment, low the risk of disease, less use of chemicals, and sustainable environment.

These findings revealed that mangrove shrimp are more suitable in the study at this stage when comparing two systems. In addition, deregulation of the afforestation area ratio is necessary to expand mangrove shrimp in the future, the irrigation facilities should be installed to expand rice shrimp, development of highly salt-tolerant paddy rice varieties, and organic shrimp that are necessary to adapt these systems as well as increase market evaluation to ensure farmers' livelihoods.