

SUSTAINABLE RICE PRODUCTION IN THE UPSTREAM REGIONS OF THE VIETNAMESE MEKONG DELTA

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VIETNAMESE MEKONG DELTA

(ベトナム. メコンデルタ上流地域における持続的な米生産)

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Thesis Summary

The external effects behind the significant development of rice production have caused environmental pollution, biodiversity losses and upstream-downstream water use conflicts in the Vietnamese Mekong Delta. To deal with these problems, it is essential to promote eco-friendly rice production approaches which use lower amount of pesticide, fertilizer and water as well. Although public policy makers, farmers, and agricultural experts have invested considerable efforts to promote environmentally friendly rice production methods, the adoption of these practices is quite low. In addition, for a long-lasting history, urban rice consumers have been consuming a lot of rice but their responsibilities on agro-environment are limited. To address these problems, the dissertation considers both supply and demand sides of eco-friendly rice. The study conducted two separate face-to-face interviews with 202 rice producers and 360 rice consumers in An Giang province and Can Tho city. The findings for the supply side showed that the average technical efficiency was 85.02%, environmental efficiency was 22.58% and water use efficiency was 18.81%, indicating that rice farmers could expand 15% of output, could reduce 77,5% of bad inputs and 81,2% of water consumption. The average environmental efficiency of conventional rice production was 16.25%, which is significantly higher than that of ecologically engineered rice, large-scale rice and GlobalGAP rice. The results indicate serious overuse of agro-chemical inputs in rice production in the Vietnamese Mekong Delta. By applying the generalized ordered logit regression, the study shows that membership in agricultural cooperatives or clubs, perception of biodiversity losses, perceived ease of use, farmer experience and the perceived difference in selling price had positive effects on the adoption while risk perception and number of paddy plots affected negatively the adoption. Regarding the demand sides, the study found that there are two distinct consumer segments (i.e. potential and unwilling). The consumers in unwilling segment are highly price sensitive and mistrust the eco-friendly labeled rice. The consumers in potential segment are willing to pay a premium of 17,027 VND/kg for non-agro-chemical rice, 170% over the price of conventional rice. These consumers are also willing to pay a premium of 2,477 VND/kg and 5,785 VND/kg for 100% and 150% increase of biodiversity, respectively. We also found that the rice consumers are willing to pay higher for private characteristics than public characteristics.