

## Payment Subsidies for Environmentally-Friendly Agriculture on Rice Production in Japan

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**Abstract :** Environmentally-friendly agriculture has been promoted for over two decades as a response to the environmental challenges brought by climate change and biological loss. Located above the equator, it is possible that Japan may benefit from future climate change, yet Japan is also a rarely developed country located in the Asian Monsoon climate region, making it vulnerable to the impacts of climate change. In this regard, the Japanese government has initiated policies to adapt to the adverse effects of climate change through the promotion and popularization of environmentally-friendly farming practices. This study aims to determine profit efficiency among environmentally-friendly rice farmers in Shiga Prefecture using the Stochastic Frontier Approach. A cross-sectional survey was conducted among 66 farmers from top rice-producing cities through a structured questionnaire. Results showed that the gross farm income of environmentally-friendly rice farmers was higher by JPY 316,223.00/ha. Production costs were also found to be higher among environmentally-friendly rice farmers, especially on labor costs, which accounted for 32% of the total rice production cost. The resulting net farm income of environmentally-friendly rice farmers was only higher by JPY 18,044/ha. Results from the stochastic frontier analysis further showed that the profit efficiency of conventional farmers was only 69% as compared to environmentally-friendly rice farmers who had a profit efficiency of 76%. Furthermore, environmentally-friendly agriculture participation, other types of subsidy, educational level, and farm size were significant factors positively influencing profit efficiency. The study concluded that substitution of environmentally-friendly agriculture for conventional rice farming would result in an increased profit efficiency due to the direct payment subsidy and price premium received. The direct government policies that would strengthen the popularization of environmentally-friendly agriculture to increase the production of environmentally-friendly products and reduce pollution load to the Lake Biwa ecosystem.

**Keywords :** profit efficiency, environmentally-friendly agriculture, rice farmers, direct payment subsidies

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