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## The Influences of Contract Farming on Small-Scale Household Performance in Developing Countries: A Modelling Approach

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### Abstract

Under the pressure of globally increasing demand for food, the expansion of agricultural production and consumption has received remarkable attention. In this regard, the need for higher productivity, increasing economies of scale, gains in efficiency and sustainability in agricultural production are considered to be very important. In order to deal with these needs, the market accesses for small-scale farmers in stable supply chains of agricultural products is considered to be a key factor. Therefore, contract farming is generally associated with opportunities for farmers in rural areas of developing and emerging countries to overcome market barriers and improve farming efficiency. This is also assumed to be true for Vietnam as a developing country with more than 70% of the population working in the agricultural production. In this country, rice is one of the most important agricultural products making it the second largest exporter worldwide mainly based on small-holder production. Thus, this study addresses the influence of contract farming on small-scale farmers' performance in the export rice sector in Vietnam. In order to obtain quantitative cross-sectional data 266 export rice farmers were surveyed in the Mekong River Delta of Vietnam, where 90 percent of the national export rice is produced, using a structured questionnaire. In order to analyze the data, first a binary probit model was applied to examine the probability to participate in rice contractual arrangement of farmers and Ordinary Least Squared (OLS) regression to estimate the influence of contract farming on household income. The OLS-model was estimated in combination with the Propensity Score Matching (PSM) procedure for identifying the income differences between the treatment (contract-farmers) and the comparison group (non-contract-farmers) to deal with the problem of sample selection bias. The results of the probit model show that determinants such as income, rice farming experience, community relationship, world price information and extension service access were the main factors leading to the households' marketing decision and, thus, influence the probability of contract participation. The OLS regression and the descriptive statistics illustrate that the contract participants have higher income, approximately 15% more than non-contract participants. Moreover, it becomes evident that there is a positive relationship between farm income and the duration of contract participation. In detail, households marketing export rice through contracts for more than 3-years achieve a 20% higher income than households marketing through contracts for less than 3-years. Based on the empirical results, policy implications are derived regarding the development of supporting programs for farmers and agribusiness.

**Keywords:** Contract farming, developing countries, farmer performance, Mekong river delta, Vietnamese export rice sector