

**Specialty Rice Adoption, Collective Action and Marketing
Channel Choice: Insights from Vietnam**

Dissertation

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Summary

Trade in specialty agricultural products remains a significant foreign exchange earner for many developing countries that largely depend on the agricultural sector for their national income. With the changing consumers' tastes and preferences, production and marketing of specialty products could improve incomes of farmers particularly when such changes are accompanied by price increments for quality produce. The existing specialty varieties are bred to suit specific agro-ecological conditions and the preferences of both farmers and consumers. The cultivation of specialty varieties further appropriates the small-farm sector in most developing countries, characterized by small fragmented plots. It is therefore important to develop specialty agricultural products that are suited for small-scale agricultural production and could significantly improve the welfare of small-scale farmers.

Rice production has contributed significantly to food security and poverty reduction among rural farming households of Vietnam for the past three decades. For instance, it accounts for 30% of total value of crops, and its cultivated area has consistently increased by 1.2% annually since 1986, resulting in annual increments by 1 million tons (Appendix 5). Over the years, the Government has focused on promoting export-oriented production, resulting in substitution of hybrid varieties by indigenous and traditional varieties including specialty rice (SR). However, adverse effects of climate change, poor yields, high production costs, and rice price volatility have led to declining incomes of rice farmers. The negative effects are exacerbated by the dwindling arable land, dysfunctional marketing farmer association, and limited investment in domestic rice value chains. As a mitigation measure, the Government is promoting SR production which demand is quickly growing in Vietnam by reviving the dysfunctional farmer associations to facilitate collective action in adoption of technologies, access to markets, and marketing information.

Farmer associations play a significant role in knowledge transfer to farmers thereby facilitating adoption of SR varieties, which has been effective in minimizing pest resurgence from mixed variety cropping with variations in harvesting periods. The farmer associations also strive to overcome problems of information asymmetry thus ensuring that

small-scale farmers fetch better prices for quality rice with brand names. With all these initiatives, several questions remain unanswered. For instance, the drivers of adoption of SR varieties and intensity of their adoption are not yet well understood. The existing literature focused on the role of collective action in facilitating adoption of hybrid and SR varieties although in most cases only qualitatively. None of the studies analyzed the effects quantitatively as we do in our study. Further, the effectiveness of such initiatives depends on farmers' preferences for marketing channels, an aspect that has not been fully studied before, at least in the SR context.

From a New Institutional Economics perspective, market imperfections result in information asymmetries that also hinder technology transfer to farmers and access to input and output markets. This is also relevant in our study particularly in the three topics related to adoption of SR, collective action and choice of marketing channels. In spite of the increasing demand for SR varieties along with other value-added products which has been highlighted in recent studies, small-scale rice farmers still lack knowledge and marketing information in order to access such high-value markets. Besides, specialty crops contribute to biodiversity and improvement of local livelihoods. Therefore, more attention should be paid to the relation between specialty variety adoption and increasing production efficiency. This dissertation combines three essays on the adoption of SR, effects of collective action on technical efficiency (TE) and farmers' choice of marketing channels. We address these topics by using cross-section data collected from 336 rice farmers in the Red River Delta (RRD) region who were interviewed between October and December 2014. The RRD is one of the major rice producing regions of Vietnam, supplying specialty and high-value rice varieties to the domestic markets including Hanoi and other cities. The question whether smallholder farmers in developing countries can be integrated successfully into high-value supply chains by adopting specialty varieties remains unanswered. Also, and particularly for SR, the drivers of adoption and intensity of SR varieties and the subsequent choice of marketing channels are not clear yet.

In the first essay, we follow the adoption behavior model based on the utility maximization criterion and adopt a two-step approach, starting with a Probit model for determinants of

SR adoption then analyzing the intensity of adoption using a Tobit model. In general, the case of SR adoption in the RRD region contributes new insights into our understanding of the adoption decisions, especially with regard to the role of social networks and farmer group membership in rural areas. Social networks have a positive influence on SR adoption through knowledge exchange and collective decision-making in the groups. Based on the findings, we recommend strengthening farmers' networks to enhance SR production.

The second essay provides an overview of current literature on collective action and its effects on rice production efficiency in developing countries. We analyze the effects of collective action (via SR farmer associations) on TE by using a Translog stochastic model. In the first part of our results, factors such as expenditure on labor and expenditure on other costs have a statistically significant impact on the SR yield. The results show a small variation in production efficiency among the households sampled. The average TE score of SR farmers in the RRD region is 77.1%. In this regard, farmers need to increase their productivity and efficiency as well as produce more SR varieties to increase their incomes from rice production.

In the third essay, we finally examine the existing rice marketing channels and farmers' choice of these channels using a multi-specification model from 280 farmers growing SR varieties. We employed a Multinomial logit model to examine the drivers of farmers' choice of marketing channels. The results reveal that even though local collectors and wholesalers dominate the rice value chain in rural areas, farmers still prefer modern marketing channels (via collective marketing channels) because of higher price and reduction in transaction costs. This has been augmented by the expansion of information sources available to farmers.