

AN ANALYSIS OF TECHNICAL EFFICIENCY OF  
CROP FARMS IN THE NORTHERN REGION OF  
VIETNAM

by

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# ABSTRACT

Vietnamese agriculture is dominated by small-scale farm households. The diversified cropping system is common in northern Vietnamese agriculture. Farms have been transformed since independence, from self-sufficient systems that produced mainly rice, to diversified farming systems, which now produce and market a large variety of products. This thesis aims at identifying the determinants of technical efficiency of farm households. The approach of this thesis offers some other important innovations over previous Vietnamese studies. Technical efficiency estimates are measured for diversified crops rather than individual crops. This is important because, a major challenge in examining production of farm households is crop diversification.

The investigation of determinants of technical efficiency should inform diversification policy for Vietnamese agriculture, especially from the base of rice production and assist in a better understanding of the behaviour of farmers using land for annual crops. The results of this paper indicate the importance of crop diversification. Farms favouring market-oriented products, such as annual industrial crops, have greater efficiency than farms focusing on staple crops such as rice and maize. The results also suggest that technical efficiency varies directly with farm size, off-farm income while it varies inversely with the extent of land fragmentation and use of family labour.

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# Glossary

AE:	Allocative Efficiency
CRS	Constant Returns to Scale
DEA	Data Envelopment Analysis
DRS	Decreasing Returns to Scale
EA	Enumeration Area
EE	Economic Efficiency
IRS	Increasing Returns to Scale
NIRS	Non- increasing returns to scale
OLS	Ordinary least squares
TE	technical Efficiency
TE <sub>CRS</sub>	total technical efficiency
TE <sub>VRS</sub>	pure technical efficiency
VARHS	Vietnam Access to Resource Household Survey
VGSO	Vietnam General Statistics Office
VHLSS	Vietnam Household Living Standard Survey
VND	Vietnamese Dong (Vietnamese Currency)
VRS	Variable Returns to Scale
SE	Scale Efficiency
SFA	Stochastic Frontier Approach