

Chanida Sirivarin 2011: A Comparison of Agricultural Total Factor Productivity of Provinces in the Northeastern Region of Thailand. Master of Science (Agricultural Economics), Major Field: Agricultural Economics, Department of Agricultural and Resource Economics. Thesis Advisor: Miss Waleerat Suphannachart, Ph.D. 77 pages.

The two main objectives of this thesis are comparing the rates of growth of total factor productivity of agriculture in the provinces of Northeastern region of Thailand and examining factors affecting agricultural total factor productivity growth in the Northeastern region. The secondary data were collected from 19 provinces in the Northeastern region of Thailand during 1982 -2007. Parametric approach is employed to estimate stochastic production frontier using the Maximum likelihood estimation (MLE) technique.

The result indicates that an average growth rate of agricultural total factor productivity in the Northeastern region of Thailand during 1982-2007 is 1.35 percent per year. The sources of total factor productivity growth come mainly from technological change which accounts for 1.25 percent per year whereas technical efficiency change accounts for only 0.10 percent per year. The total factor productivity growth of Yasothon province is the highest, accounting for 1.97 percent per year, followed by Ubon Ratchathani province and Kalasin province with an average annual growth rate of 1.84 and 1.78 percent, respectively. Amnat Charoen province has the lowest productivity growth with an average rate of -0.19 percent per year. The result of the factors affecting the total factor productivity growth shows that education, irrigation area and annual rainfall have a positive and significant impact on the productivity growth. Education has shown to be the most important factor explaining the total factor productivity growth. Therefore, the government should provide continuous support on education along with promoting production techniques that are appropriate to the capacity of farmers in each province. There should also be policies that promote the use of land, labor and irrigation area in a manner that emphasize more on their quality improvement.

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