

Darunee Sungseerath 2014: Evaluating Technical Efficiency of Agricultural Cooperatives in Sakon Nakhon Province by Using Data Envelopment Analysis (DEA). Master of Arts (Cooperative Economics), Major Field: Cooperative Economics, Department of Cooperative. Thesis Advisor: Mr. Pornchai Supavititpattana, D.B.A. 75 peags.

The objective of this research was to evaluate the technical efficiency of agricultural cooperatives in Sakon Nakhon Province by using the technique of Data Envelopment Analysis (DEA). The investigation was focused on 14 very-large-sized agricultural cooperatives in Sakonnakhon Province. The economic variables used for the study consisted of two input variables: 1) fixed assets, and 2) staff costs, along with one output variable: income. The secondary data used for the analysis was drawn from the financial statements of the cooperatives for the year 2013.

The results showed that two of the agricultural cooperatives were efficient according to analysis based on the constant return to scale (CRS) method, compared with a figure of six which was produced by the variable return to scale (VRS) system, with an average level of efficiency of 0.530 and 0.740, respectively. When applying inverse DEA, it was found that one agricultural cooperative was inefficient when the constant return to scale (CRS) technique was applied, whilst use of the variable return to scale (VRS) process demonstrated that four of them fitted into this category, with a typical degree of inverse efficiency of 0.371 and 0.636, respectively. It was concluded that there were two groups of agricultural cooperatives: those which performed efficiently and were of appropriate scale, and those which were in need of an improvement in terms of both performance efficiency, and scale.

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Thesis Advisor's signature