

## Determinants of cost efficiency of smallholders pepper in Sarawak, Malaysia

### ABSTRACT

Pepper crop (*Piper Nigrum* L) is one of an important source of income for 67,000 rural families in the interior areas of Sarawak. This study is carried out to estimate technical, allocate, and cost efficiency among smallholders pepper in Sarawak. Then, the determinants of cost efficiency among smallholders pepper also investigated. It will identify the sources where improvements can be made to help the pepper farmers to minimize production cost. This study used 678 of smallholders pepper and the data is obtained from the field survey that was conducted in the month of August to December 2009. This study used a constant return to scale (CRS) input-oriented model to estimate technical efficiency and a Cost-DEA model is used to estimate cost efficiency. Mean of technical, allocative, and cost efficiency are 0.567, 0.585, and 0.438, respectively. Farmers are not efficient in input utilization and are not producing pepper yield at minimum input and minimize cost. The inefficiencies are due to misallocation of resources used. The contacts with extension agents per year, joining farmer's organization, full-time pepper farming, and participating in farming courses and study visit and education level is positively and statistically significant with cost efficiency among smallholders pepper.

**Keyword:** *Piper Nigrum* L; Data envelopment analysis; Cost efficiency