ISSN 0976-4224
JOURNAL OF
ECONOMICS

 J Economics, 5(2): 141-151 (2014)

Estimating Technical and Scale Efficiency of Red Meat Production: A South African Case Study

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KEYWORDS Boer Goat. Data Envelopment Analysis. Red Meat Production. Scale Efficiency. Technical Efficiency. Livestock. Goat Farming

ABSTRACT The purpose of the study is to use data from a case study to build a data envelopment analysis (DEA) model to compare the financial performances of South African boer goat with cattle and sheep production, respectively. Data was collected by calculating the financial performance, which is broken up into six measurements. These measurements formed the output variables and various levels of capital employed were used as the input variable to determine the technical and scale efficiencies of the comparative red meat product lines. Data was developed for 65 different scenarios, resulting in a total of 455 data points. The study firstly concludes that South African boer goat production outperforms cattle and sheep production financially, and secondly, that it is easier for sheep production to operate at a scale that maximises productivity, followed by South African boer goat and then cattle production.