

ABSTRACT

Efficiency in the use of Resources on Small Banana

Farm Holdings - A Case Study in the Rio Grande

Valley of Portland, Jamaica.

Glenroy Everard Ennis

This study evaluated the efficiency of small banana farm holdings in the Rio Grande Valley of Portland, Jamaica. The primary objective was to examine the availability and productivity of major inputs used to produce bananas for export. To enhance the quality of investigation, an attempt was made to categorize the sample frame into two distinct categories based on farm size. These include ≥ 2 hectares and < 2 hectare plots.

Structured questionnaires were used to collect information from the farmers, for the year, 1993. The data covered personal characteristics, farm characteristics, and the production of export quality bananas.

Based on statistical analysis of the data, the Rio Grande Valley seemed suitable for commercial production of bananas. The overall sample averaged approximately nine tonnes of bananas per hectare from which 59% was exported. The average production for the large (≥ 2 ha.) and small (< 2 ha.) farmers were 15 and five tonnes per hectare respectively. Only 28 percent of the arable land found within the study area was used for banana production.

A Cobb-Douglas production function was used to fit the data for the various farm categories. The analyses were done in terms of total production and total exports. Productivity levels for the resource inputs were determined by adopting the allocative efficiency technique, MVP_x/P_x . A ratio of one implies efficiency and inefficiency otherwise.

Generally, the results showed that small banana farmers in the Rio Grande Valley were not allocating resource inputs efficiently. In most cases, the inputs reflected MVP_x/P_x ratios less than one, implying overuse. The larger farmers had more access to the required inputs and were obtaining three times more yields per hectare than the smaller farmers. While the practice of producing bananas solely for export realized constant returns to scale, there appeared to be increasing returns to scale for total production. This suggests that the farmers were cautious with resource allocation, probably because of limited financial resources.

Although the Rio Grande Valley farmers are largely inefficient in their use of resources apparently most of the inputs should have been channeled into the production of export bananas since constant returns to scale resulted at this level of operation.

Supervisor, Dr. L.B. Rankine, who played a major role in the development of this study, and the staff of the Statistics Department, Ministry of Agriculture, Jamaica, for their invaluable contributions, particularly towards the construct of the questionnaire, much gratitude is due. I also wish to thank Dr. C. Pemberton who was always available to provide technical consultation and for his very useful suggestions and Dr. C. McIntosh for editing the manuscript.

The task of searching for relevant information for this study was assisted by the timely provision of useful data by Dr. J. Dixon, Director of Research and Mr. R. Consoles of the Banana Board; Mr. V. Evans, Director, and other staff of the Banana Export Company. I am deeply indebted to them. Special thanks to Mr. E. Thompson, a major contractor in the struggle who took me to every corner of the study area and provided useful information.

This thesis could not have been completed without the help of Mr. P. Lawson and Dr. D. Alleyne who skillfully guided me throughout the research and solved my problems. I must thank them.

Special mention must be made of Ms. J. Welch and Ms. G. Davis for their encouragement, reviewing the typing and the literary standard of the final copy of the thesis.