

ABSTRACT

Economic Evaluation of the Impact of
Agricultural Research Expenditures:
The Case of Windward Islands
Banana Growers' Association

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Several studies have shown that investments in agricultural research are highly productive. However, in the case of the Windward Islands Banana Growers' Association (WINBAN), there existed some uncertainty about the magnitude of the productivity of its research and development (R&D) efforts.

The study therefore aimed to evaluate the impact of these R&D efforts in order to provide a more objective criterion for the allocation of R&D resources. Consequently two aggregate production functions were specified for the banana industry of the Windward Islands and R&D expenditures were incorporated as a proxy variable for R&D efforts. Time series data were then fitted to the two alternative forms of the production function.

From the results obtained, the linear form was selected as the empirically appropriate functional form of the production function. Research and development was found to have had a positive impact on banana

output, five years after the R&D expenditures. The estimated marginal value product of R&D expenditures was \$127.50, meaning that for each additional real dollar spent by WINBAN on R&D efforts, the gross current dollar value of banana output would increase by \$127.50 in five years. The calculated marginal internal rate of return (MIRR) of R&D expenditures was approximately 9% per annum.

Comparing this MIRR with the cut-off rate of return (of 10%) stipulated for the agricultural projects by banks in the Windward Islands, it is recommended that additional resources be judiciously allocated to the R&D efforts of WINBAN. However, the research-extension liaison needs to be quantitatively improved to enhance the diffusion and adoption of the R&D results.