

THE ECONOMICS OF DRAWDOWN IRRIGATION FARMING:
A CASE STUDY OF THE AMPAEM AREA
OF GHANA

A Dissertation Submitted in Partial Fulfilment
of the Requirements for the Degree
of Master of Economics

by

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DECLARATION

I certify that the substance of this dissertation has not already been submitted for any degree and is not being currently submitted for any other degree.

I certify that any help received in preparing this dissertation, and all sources used, have been acknowledged in this dissertation.

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Albert Ofei-Mensah

ABSTRACT

In the study parametric linear programming is used to analyse the profitability of alternate crops (i.e. maize, tomatoes, okro, groundnuts and cowpeas) suited to the Ampaem locality of Ghana. Attention has been focused on the Ampaem drawdown area because the economic and technical opportunities available to farmers are better documented for the area. Moreover the environmental conditions in the area are similar to the other drawdown areas along the Volta Lake; therefore deductions from the analysis can be generally applied for policy recommendations.

Drawdown has two possible meanings. Firstly, it is the area of land defined between the maximum high water level of the lake and the current water level as employed in the parametric analysis. Secondly, and more usually in the study, it is defined as the area of land between the season's maximum and minimum lake levels. The most important economic aspect of off-season production of crops in the drawdown areas, is their potential as food supplement to relieve the country of food shortage if the harvest in the previous major season was poor. An additional economic advantage of the drawdown, as inherent in the second definition, is the retention of 'residual moisture' which can support crop growth for an average of 40 days. However, supplementary irrigation has to be effected to ensure full plant growth. Thus the Volta Lake drawdown has been identified as an important resource which can contribute to food production.

The results show that, out of the five recommended drawdown crops, groundnuts and tomatoes are important as cash crops while maize should be grown for subsistence. Moreover small-scale irrigated agriculture is to be given some attention by policy makers because of the drought nature of drawdown areas along the lake. This will, in turn, help to boost up food production in the country. Finally, in the study, a direct relationship has been established between the maximum lake level and the total drawdown area to be exposed in a particular cropping season.

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Any errors or views presented in this dissertation are my own responsibility.

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