

ENERGY USE IN KENYA'S AGRICULTURAL SECTOR 1960-1978

A STATISTICAL AND ECONOMIC ANALYSIS

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FOREWORD

Agricultural production depends upon photosynthesis to convert solar energy into a form suitable for consumption by man, small and large animals and various types of micro-organisms. In addition to photosynthesis performed by solar energy modern agriculture requires various types of energy. Besides human labour, animal draft power and the continuous work of micro-organisms modern agriculture uses fossil and non-fossil energy in the form of fertilizer, pesticides and fuel for the operation of agricultural machines, lifting water in irrigation system, and the transportation, processing and marketing of agricultural products. Agriculture is therefore both a producer and a consumer of energy. Even though agriculture accounts for only a small share of overall energy consumption in any economy, the broad impact of energy use has to be understood.

The purpose of this publication is to put into perspective energy use under the control of man in Kenya's agricultural sector. The author has done a similar study of energy use in the agricultural sector of Germany, which covered almost the last 100 years. This enabled him to observe the large structural shifts in the output-input ratio of energy which occurred in the most recent decades in that country's agricultural sector. The focus in this study devoted to Kenya's agricultural sector is despite its similarity in methodology of energy accounting a little different. It is an attempt to demonstrate that energy accounting to get an energy balance sheet alone is not sufficient to derive optimal policy decisions. Energy analysis has to be accompanied by an economic analysis to record and to respond adequately to the differently developing scarcities of energy inputs in agricultural production.

A large part of my personal work energy has been spent - besides teaching and performing other duties - staying with the University of Nairobi for the academic years 1979/80 and 1980 /1981, in the search, collection arrangements and analysis of