

**Phil O'Keefe et. al. (ed. *Energy and Development in Kenya*)  
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The timeliness and relevance of this study on "Energy and Development in Kenya" cannot be overemphasised. A confluence of unfavourable events have underscored the urgency for energy planning, particularly in the less developed countries (LDCs). These include rapid population growth, escalating oil and oil-related product prices amidst shrinking export earnings, and massive depletion of fuel wood stocks with associated ecological damage. The unfortunate results have been the widening trade deficits, increasing debt levels and debt-servicing burdens and massive rural and urban unemployment. Accelerated wood stock depletion has resulted in another form of energy crisis as wood shortfalls put severe stress on the rural economy by raising both effort and collection times.

The material presented in this volume has been the outgrowth of an extensive and comprehensive research survey carried out by the Kenyan Fuelwood Project. The most important revelation of this study is that fuel conservation means more than adjustment of thermostats and other 'cuts' in fuel consumption, which indeed promise a slow positive impact. Rather, given the worsening terms of trade against the LDCs and the critically binding capital constraint facing the LDCs, energy conservation also implies innovation and design of appropriate technologies and, more importantly, a search for alternative commercial and non-commercial energy supply. It is perhaps with this broad perception of the energy crisis that the authors give an unusual emphasis on the importance of fuelwood, which constitutes the most important biomass energy source in Kenya.

This book, which presents a concise summary of the main issues and findings of the project effort, is divided into eight chapters. The introductory chapter outlines the germination, growth and workplan of the Kenyan Fuelwood Project. The project's main objective was "to build on the existing knowledge of the overall energy supply and demand situation in Kenya, and more particularly, the supply of and demand for fuelwood" (p.4).

Chapter 2 charts out the basic correlation between economic output and energy consumption in general terms. Economic development is seen as being linked historically to increasing energy consumption per capita. It is argued however, that this relationship, though indicative of the general trend, is not conclusive because it considers only commercial energy supply. The relationship is even ambiguous for the LDC's due to wide variations in the pattern of development accross countries. This chapter which also summarises the aggregate performance and prospects of the Kenyan economy, ends up by identifying the prerequisites for long-range energy planning; emphasising the need to incorporate economic and demographic features, changes in income distribution, specific sector growth and relative sectoral growth.

Chapter 3 gives a snapshot of energy supply and demand relationship for the (1980) base year. Through the 'end use' approach, energy consumption estimates are given by user sector, fuel type, and selected end use categories. Energy supply in Kenya is dominated by wood which comprises about 75% of the total energy resource base in the country. Wood also accounts for 72% of total final consumption, indicating a substantial wood loss, while commercial energy accounts for only 28% of total final energy consumption in Kenya and of this, the bulk, i.e. 93%, is met by petroleum products. Overall sectoral consumption is dominated by the rural household sector which consumes about 53% of total energy consumption in Kenya. Industry consumes 24%, transportation 14%, urban household 6%, agriculture 2%, and commerce 1%. The chapter ends by delineating the extent of secondary conversion processes and the demand structure for imported energy forms.

The fourth chapter focuses on the determinants of fuelwood supply and demand in Kenya. A three-fold criteria based on regions, zones and land use patterns, permit detailed specification of wood stocks, yields and availability. Apart from stocks and yields, future supply of wood resources in Kenya is seen as being governed by other factors such as competing uses of land, geographic factors and socio-economic factors such as access to modern technology, household labour economy and land tenure. The thrust of this chapter is that if the energy problem is to be adequately addressed, it should be placed within the overall development context of the Kenyan economy.

Chapter 5 describes the projections of end-use demand, land use patterns and fuelwood resources for the Kenyan economy. If future energy policy is assumed not to deviate significantly from the present one, projections predict a deepening energy crisis in Kenya for the remaining decades of this century. Even conservative predictions indicate that the oil import bill will exceed Kenya's total current export earnings by 1990. Wood requirements will also by far, exceed wood supply by the close of the century if no pragmatic effort is undertaken to avoid this. Chapter 5 also analyses some of the social-economic implications of future fuel shortfall, particularly on rural Kenya.

Corrective strategies for improving the long-term energy imbalance in Kenya are outlined in chapter six. Chapter 7 sets out an agenda for implementing the most operational strategies. Great effort is also taken to assess the possible impact of each strategy in terms of direction, scale and timing. The last chapter winds up the analysis and outlines the salient features of an integrated energy programme for Kenya.

There is no doubt that the editors have done a commendable job in presenting a concise summary of opportunities and constraints of energy development in Kenya. In particular, this book and the forthcoming technical volumes, constitute a vital information source on Kenya's current energy balance. As the editors put it, however, the problem is "to convert this static picture into one moving forward with time." Chapter 5 attempts to resolve this problem through forecasts. Economic forecasting, however is most difficult and risky, particularly in areas such as Kenya, where information is not consistently available and where there has been relatively little work in modelling and behavioural relationship. Future policy environment and strategic orientations are difficult to accommodate in such predicative studies. Changes in external environment may turn the forecast upside down, particularly for a dependent and open economy. Chapter 5 should, therefore, be read and interpreted with caution.

In view of the unpredictability as well as the potency of both internal and external environment and the choice of development strategy in determining development prospects, simple projections are not useful guides for policy formulation. It is in this light that the use of the policy case scenario in chapter 7 should be highly commended. Scenarios are flexible and can accommodate a range of possible conjecture of circumstances which might generate a range of possible futures. They are, therefore, more useful in exploring the long-term implications of different external outcomes and internal strategic choices.

The only problem with the scenario analysis adopted in this volume is that it tests the viability of energy policy measure on the criteria of cost effectiveness and technical feasibility. By so doing, it avoids investigating the social problem. To be effective, a policy should not only be technically feasible and economically efficient, but also, it should be socially acceptable. It is thus unrealistic to ignore the social and cultural needs of the users and their political objectives. It is unfortunate, for instance, that the suggested improvements in the efficiency of end-use conversion devices, are not explicitly linked to the existing social economic structure in Kenya. There is need for energy planners to be far more aware of the many constraints on traditional farming practices before blaming peasants for improper management of land and misuse of fuel.

On the whole, this book is a valuable source of energy information on Kenya. The analysis of the issues, though subtle and comprehensive, is less technical, less theoretical and easy to read and interpret. To achieve this, the editors had to resort to a more imaginative, qualitative and intuitive style, rather than the more formal quantitative approach. The book therefore, is, not only a useful manual for energy planners, but it also deserves a wider readership.