

# Preface

The writing of this book was spurred by an earlier successful publication of a similar book by the same authors on “Energy Resources in East Africa”. Africa is no doubt a continent of large diverse resources and their management by individual countries is equally diverse as they usually embrace cultural, political and ethnic interests. These considerations are often influenced by the desire of one group to have more control of the national resources, and therefore, a management framework is rarely based on the interest of the nation as a whole. In certain instances, as captured by president Obama (US) in his recent visit to Kenya, the desire can be so strong that vices such as corruption, open theft, employment of unqualified relatives and friends are openly practiced at the expense of national development. The end result is that the basic services to the people are neither adequately provided nor fairly distributed and so the deprived citizens begin to feel alienated from their own government system, and the “grand corruption” settles in permanently. This, of course, is a very pessimistic way of looking at the situation but, unfortunately, it is the disease, which in its different forms, has crippled African Economic development particularly in the energy provision and infrastructural development sectors. Energy is known and rightly accepted as the driving force for any development, and Africa has a significant share of known world energy resources such as solar, oil, gas, coal, wind, geothermal, hydropower, and even uranium. However, it remains the poorest continent in the world mainly due to management culture described above. This book has attempted to identify energy resources in Africa and how each country has used these resources for her economic development and general welfare of her people.

The continent has more than fifty independent states, and naturally, it would be difficult to fully present the energy situation in each country in detail. The authors, therefore, divided the continent into four main regions and attempted to give an account of each region. East Africa, which straddles the Equator and lies in the sub-Saharan region, is given an extensive coverage as a typical example of situation in sub-Saharan Africa (SSA). It has a whole range of climatic conditions and vegetation cover that adequately represent the situation in SSA, and therefore, the

discussions on biomass energy issues for East Africa also apply to West and southern Africa. North Africa and South Africa have their unique aspects that are presented in their respective chapters. Biomass use as a source of energy and biomass cooking and heating devices for the rural and peri-urban population has common features across Africa. This is why their extensive coverage in one region is sufficient. It should be noted that challenges and opportunities are not presented as chapters, but are scattered over all the other chapters. This makes it easier for the reader to identify the specific challenges and opportunities that exist in each country or region. In some instances, overall challenges and opportunities are discussed in Chaps. 1, 7, and 8, where the discussions are based on the global and African circumstances in general. There are a few cases in which geographical information and economic development drivers are presented to assist the readers who are not familiar with the location of some African countries.

It is important to note that most of the statistics presented in this book, particularly population figures, proven reserves of various resources and installed power capacities are changing fairly rapidly in some cases. Some data are not readily available and so figures referring to populations were mostly estimated using population growth rates, while quantities such as national oil, gas, and coal reserves are based on those quoted by most sources. They may therefore be different from those quoted by certain sources. Due recognition should also be given to the fact that these quantities change with time. However, the variation should not be more than 10 % for the specified year. The reader may also notice a number of repetitions in various sections and chapters. These should be expected in a book of this nature due to the need for comparative analysis of some information.

The African solar and wind energy potentials are mentioned in Chap. 1 in a very general form. This is so because Africa traverses the equator, which divides it into two almost equal parts so that solar radiation patterns in both northern and southern parts are relatively similar. It is also well known that wind speeds are suitable for the development of wind power generation facilities in Africa and so the treatment in Chap. 1 is considered sufficient. However, in some cases, the levels of wind and solar energy distributions are given for specific countries. Finally, some basic principles of renewable energy conversion technologies are also given in Chap. 6.

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