

## A REVIEW OF COAL MINING AND ENVIRONMENTAL CONCERNS, CHARLES UDOSEN (ED.)

by

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**Key words :** Coal mining, Distribution and reserves, Natural resources, Environmental concerns, Nigeria.

The book *Coal Mining and Environmental Concerns*, Charles Udosen (Ed.) draws our attention to the attendant ills of unguided exploitation of natural resources. The 259-page book has captured in one volume virtually everything one would want to know about coal, its origin, formation, types of coal mining methods as well as global distribution, reserves and the Nigerian situation, including dangers to miners and safer times in modern mining and environmental concerns. Perhaps the most unique aspect of the book is the combination of experts from various fields of endeavour including Linguistics in the Faculty of Arts, through Geography, Sociology and Political Science in the Social Sciences to Botany and Ecological Studies, Microbiology and Soil Science in the Life Sciences, and Agriculture, Chemistry and Physics in the Physical Sciences. Meaning, the environment concerns each and every one of us.

A major issue that occupied the world, particularly the industrialized nations in the 1960s is the subject that has been generally termed "environmental degradation". In 1962 for instance, Biologist Rachel Carson published "*Silent Spring*" which documented the pollution of air, water and wildlife from pesticides such as DDT. This influential book helped broaden the concept of resource conservation to include the preservation of the environment (the quality of air, water and soil). With the discovery of the use of fire, pre-historic man took a giant leap in his development. It meant good food and better living conditions and later, a source of energy that largely replaced muscle power. Since then, energy has been an important fac-

tor for development. The availability and exploitation of new energy sources have accompanied and made possible major economic and social changes.

Perhaps no energy source has impacted on man as coal. The industrial revolution of the 19<sup>th</sup> Century was made possible by the extensive use of coal as an energy source. In it, man developed panache for making things—building materials, machines, furniture, plates, pots, pans, clothes, food, etc., and all this stuff required some heat to bend, harden and dye. As our relative wealth then increased, we produced more people (population explosion). Thus, from the turn of the 20<sup>th</sup> Century, a simple and compelling pattern emerged – the more energy we produced the more stuff we made, and the more stuff we made, the more we wanted. And the more we wanted, the more energy we used to make more stuff – a virtuous cycle of consumerism in which man developed a total dependency on coal and the energy it produced, and this appetite for energy grew far more than even his appetite for food.

The rebirth of the economy after the Second World War and the great development of industrialized countries were made possible at the same time deeply conditioned by the availability of yet another source of energy – petroleum which is to coal what coal was to wood. The irony is that both coal and petroleum are fossil fuels, a term for buried, combustible, geologic deposits of organic materials, formed from decayed plants and animals that have been converted by exposure to heat and pressure in

the earth's crust over hundreds of millions of years ago. The simple truth is that fossil fuels are just trapped energy – trapped, buried and heated by the earth's crust. And when we burn coal, oil or gas we release that energy in the form of heat while releasing other chemicals into the atmosphere – most notably carbon dioxide, carbon monoxide and other oxides of sulphur. Thus, in our extravagant exploitation of energy resources it was conveniently forgotten that on all fronts, short term economic gains were being won at the expense of huge but latent environmental losses. By the late 1980s, global environmental damage began to make headline news such as:

- Loss of tropical forest cover
  - Widespread dying of savannah margins
  - Regional pollution of inland seas and oceans
  - Atmospheric contamination on a vast scale in the form of increased acidity and greenhouse warming
  - Growing alarm over the distribution of toxic chemicals in consumer goods and waste discharges
- So serious has been this issue that it called for a summit
- The Earth's Summit to find ways of stemming further degradation.

With oil consumption topping a thousand barrels per second and existing resources not likely to last over five decades, there are calls for a return to the huge reserves of coal that was abandoned for oil albeit to use it more efficiently. Hence the need for a book such as the one under review which draws our attention to the attendant ills of unguided exploitation of natural resources.

#### THE BOOK

TITLE	:	Coal Mining and Environmental Concerns
NUMBER OF PAGES	:	259
EDITOR	:	Charles Udosen, Ph.D.
CONTRIBUTORS	:	11 Experts from different academic disciplines
NUMBER OF CHAPTERS	:	9
TABLES	:	28
FIGURES	:	18
PLATES	:	2
APPENDIX	:	2

The 259-page book is a valuable multi-disci-

plinary resource material not just for students but also for policy makers and environmentalists. It has captured in one volume virtually everything one would want to know about coal and its exploitation ranging from the origin and formation, types of coal mining techniques as well as global distribution and reserves, the Nigerian situation as well as other well-researched topics.

Ideally, this work can be seen as comprising three parts, namely:

Part one is made up of the first four chapters:

- History of Mining – Chapter 1
- Coal Mining in the U.S. – Chapter 2
- Mining Techniques – Chapter 3
- Global Perspective of Coal Production – Chapter 4

Indeed one is hard-put to figure out the place of Chapter 2 in this part. The materials could either have been used in Chapter 1, where coal mining in post 1900 period is treated for five major world producers including the United States of America or in Chapter 4 where the Global perspective of Coal Production is considered. However, four novel ideas worth mentioning in this part are:

- The rationale for trade unionism alongside coal mining and community realities – Chapter 1

We see here that the use of strike to press for genuine demands by workers did not start today. Thank God the Industrial Arbitration Panel has confirmed the inalienable right of the Nigerian Worker to use this weapon for collective bargaining.

- The exposition on the various methods of surface mining as well as the five principal underground mining methods. Worthy of mention are the section on Dangers to Miners and Safer Times in Modern Mining – Chapter 3

- The African Scenario – Mining and Environmental Concerns, and
- Lessons from the Developed World, both in Chapter 4

A major flaw in this chapter (Chapter 4) is that it has not considered international trade in coal, thus leaving some vital questions unanswered. Are there countries that produce more than they consume and need to export? Who are the buyers? Are there those that consume more than they produce and need to

import? Where do they import from? Are there those who do not produce at all and totally depend on imports?

#### PART TWO

This section consists of three chapters (Chapters 5, 6, and 7) which could be considered as the Nigerian Case Study. Chapter 5 looks at Coal Mining in Nigeria including the history, mining methods, production problems as well as coal resources. Chapter 6 addresses Coal Mining in Kogi State featuring the Okaba/Odagbo Coal Mine which came into operation in 1967 as a result of the Nigerian Civil war and which remains one of the few operational mines to date. Chapter 7 dwells on the Physical Geography of Okaba/Odagbo area. Again, there is no conceivable reason why the materials in Chapters 6 and 7 were not merged considering particularly that the author of Chapter 6 contributed four of the nine subsections of Chapter 7.

#### PART THREE

The last two chapters – Chapter 8 – Environmental Impacts of Coal Mining and Chapter 9 – Acid Mine Drainage constitute the third part of this laudable work and indeed, herein lies the crux of our concern.

The general delivery of the work is highly commendable. The font is quite large, easily readable and the page set-up, reader friendly. Most of the tables are well arranged and carry significant information

relevant to the text. The only problem is that some of them are not referred to in the text and thus, wrongly placed. The figures on the other hand, need reworking and should be the first area of concern in subsequent editions. So also the plates and as a matter of fact, Figure 7.7 on page 136 should rather be a plate.

#### CONCLUSION

The most unique aspect of this work which indeed is its strongest point, is the combination of experts: from Linguistics in the Faculty of Arts, through Geography, Sociology and Political Science in the Social Sciences to Botany and Ecological Studies, Microbiology and Soil Science in the Life Sciences and Agriculture, Chemistry and Physics in the Physical Sciences. What a blend! This portrays vividly that the environment concerns each and every one of us. If the six-fold objective of the book as stated by the editor is anything to go by, I find this work marvelous in conception and excellent in delivery.

#### REFERENCES

- Carson, R. 1962. *Silent Spring*. Houghton Mifflin Publishing Company. Boston, MA, USA.
- Udoh, F.D. and Etim, P.J. 2008. *Fundamentals of Research Methodology*. Abaam Publishing Company, Uyo, Nigeria. ISBN: 978-769-589-1.
- Udosen, C. 2010. *Coal Mining and Environmental Concerns*, Charles Udosen (Ed.). Unwana Graphics Press, Uyo, Nigeria. ISBN: 978-2687-01-2.