Appropriate Technologies for Environmental Protection in the Developing World

Ernest K. Yanful
Editor

Appropriate Technologies for Environmental Protection in the Developing World

Selected Papers from ERTEP 2007,
July 17-19 2007, Ghana, Africa

Springer

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Cover photos (from top left):

Photo 1: Regular manual street sweeping in Kumasi, Ghana, helps maintain a clean environment whilst creating employment opportunities for the urban poor: June 2008. Courtesy of Anthony Mensah, Kumasi Metropolitan Assembly

Photo 2: Preparing the base course for surface dressing of access road to Kumasi Sanitary Landfill site: July 2003. Courtesy of Anthony Mensah, Kumasi Metropolitan Assembly

Photo 3: Small mud house (kitchen) constructed with bamboo frames at Enyan Abaasa, Central Region Ghana. Courtesy of Ernest K. Yanful

Photo 4: Foreground: Kumasi Sanitary Landfill & Septage Treatment Facility. Courtesy of Anthony Mensah, Kumasi Metropolitan Assembly

ISBN 978-1-4020-9138-4

e-ISBN 978-1-4020-9139-1

Library of Congress Control Number: 2008936885

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Preface

This book is the first edited compilation of selected, refereed papers submitted to ERTEP 2007. The selected papers either dealt with technologies or scientific work and policy findings that address specific environmental problems affecting humanity in general, but more specifically, people and ecosystems in developing countries. It was not necessary for the work to have been done in a developing country, but the findings and results must be appropriate or applicable to a developing country setting. It is acknowledged that environmental research, technology applications and policy implementation have been demonstrated to improve environmental sustainability and protection in several developed economies. The main argument of the book is that similar gains can be achieved in developing economies and economies in transition.

The book is organized into six chapters along some of the key themes discussed at the conference: Environmental Health Management, Sustainable Energy and Fuel, Water Treatment, Purification and Protection, Mining and Environment, Soil Stabilization, and Environmental Monitoring. It is hoped that the contents of the book will provide an insight into some of the environmental and health management challenges confronting the developing world and the steps being taken to address them.

Acknowledgements

The Editor wishes to thank the authors of the papers for their contribution to this volume. Publications coordinator, Robyn Gaebel, did an excellent job handling the selected manuscripts and communicating with the authors. Alex Dolson, Shahenda Abou-Aly, Cindy Quintus and Erin Cullen provided editorial assistance in the compilation of papers for the original conference proceedings. Funding for the conference was provided by the Geotechnical Research Centre and Research Western at The University of Western Ontario, Duke University Pratt School of Engineering, the Canadian International Development Agency, Ministry of Local Government, Rural Development and Environment, Ghana, Goldfields Ghana Limited, Newmont Ghana Gold, AngloGold Ashanti, Tema Oil Refinery, Shell Ghana Limited, Volta River Authority, Ghana, Zoomlion Environmental Limited, New Times Corporation, Graphic Communications Group Limited and Ghana Telecom.

Introduction

Global industrialization and trade affecting developing countries have occasioned increasing human and economic activities that tend to impact negatively on the environment. Such impacts have created huge environmental problems of air, water and land pollution that confront governments and require mitigating solutions. Recent world summits have highlighted the need to develop environmental technologies and policies to protect fragile ecosystems. The purpose of the First International Conference on Environmental Research, Technology and Policy, ERTEP 2007, was to discuss grass-root environmental issues, assess efforts by government machinery and identify what communities and corporate entities can do as a social responsibility to mainstream and maintain environmental protection and integrity for sustainable development. The three-day conference attracted some 250 people delegates from 18 countries. Invited plenary lectures on policy were presented by high ranking officials from the Ghana Government, including the sector Ministers for Local Government, Rural Development and Environment (Honorable Stephen Asamoah-Boateng), Lands, Forestry and Mines (Honorable Professor Dominic Fobih), and Women and Children's Affairs (Honorable Hajia Alima Mahama). Osagyefuo Amoatia Ofori Panin, the Okyenhene (Ghana) opened the conference, while Honorable Joseph Henry Mensah, Senior Ghana Government Minister delivered a plenary address. Other plenary and keynote speakers included Dr. Ulf Jaeckel, Federal Ministry for the Environment, Berlin, Germany, Ms. Joyce Aryee, Ghana Chamber of Mines, Mr. Charles Darku, Volta River Authority, Ghana, Mr. Lars-Ake Lindahl of the Swedish Mining Association, Dr. Wanda Günther Risso, University of Sao Paulo, Brazil, and Mr. Peter Steblin, City Engineer, City of London, Professor George Nakhla, University of Western Ontario, Canada, and Dr. Clement Dorm-Adzobu, and Mr. Philip Acquah, Ghana. The plenary lectures were followed each day by technical breakout sessions during which more than 100 papers were presented under the seven themes of the conference: Environment, Health and Safety, Oil and Gas Extraction and Environment, Forestry and Environment, Mining and Environment, State-of-the-Art Technologies for Environmental Performance and Protection, Integration of Gender in Environmental Management, Environmental Monitoring Institutions and Policy Development, and Sustainability, Corporate Investment and Social Responsibility.

Nearly all technical papers presented at ERTEP 2007 were reviewed by a theme of international referees selected on the basis of their expertise in the subject area. Each paper was reviewed by at least two referees and written comments were sent to authors for the preparation of revised papers. Following the conference, the Editor of the current volume and ERTEP 2007 Conference Chair, Professor Ernest Yanful, and three editorial assistants, Robyn Gaebel, Cindy Quintus and Alex Dolson selected a number of refereed papers dealing with technologies and policy interventions appropriate for use or application in the developing world for publication. Authors of the selected were informed of the process and additional revisions were requested by the Editorial Team to produce this final volume.

Editor

Professor Ernest K. Yanful

Editorial Assistants

Robyn Gaebel, Cindy Quintus, Alex Dolson
and Long Vu

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