

Dialogue on Sustainability and Environmental Management

International Conference
February 15-16, 2017
University of Ghana, Legon
Accra, GHANA

Conference Proceedings

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Preface

Dialogue on Sustainability and Environmental Management

The Sustainability Dialogue Conference is organised by the Institute for Environment and Sanitation Studies (IESS), University of Ghana with the Organisation Committee made up of Dr. Daniel Nukpezah (Chairman), Dr. Benjamin D. Ofori and Dr. Adelina Mensah. IESS was established in 2010, at the request of the Government of Ghana in response to several drivers, enablers and outcomes that are key to the nation's development. The institute employs interdisciplinary and participatory approaches to train future scientists, managers and decision makers who contribute to the protection, management and development of the country's environment and natural resources. As part of its efforts to continue its relevance and ensure that its students are exposed to international opportunities, IESS has been involved in the DAAD funded 3-year Environmental Management Information Systems (EMIS) project starting from 2015. Currently, University of Ghana has three doctoral students on the EMIS project which has integrated the doctoral students into the recently established PhD Network named Doctoral Education in EMIS (DEMIS). This Network comprises of:

- Carl von Ossietzky University of Oldenburg, Germany
- University of Ghana, Ghana
- Universidade Pedagógica, Mozambique
- The Nelson Mandela African Institution of Science and Technology, Tanzania

As a further step, and in partnership with the University of Oldenburg, Germany who are conference co-sponsors, the *Sustainability Dialogue: International Conference on Sustainability and Environmental Management* is being organized by IESS. The conference is funded by the Office of Research, Innovation and Development (ORID) of the University of Ghana and the German Academic Exchange Service (DAAD) through the University of Oldenburg.

The issue of sustainability and environmental management is an important one. The 21st century has already chalked a decade and a half and counting. Upholding human existence in the face of population growth, resource depletion and environmental change calls for a new development paradigm beyond business-as-usual. The *Sustainability Dialogue Conference* seeks to bring together researchers and industry players to discuss and share ideas and research findings on key aspects of Sustainability and Environmental Management. The conference provides a platform for young scholars and next generation academics to present relevant research work. The 2-day conference features a panel discussion on the topic: Environmental Research and Sustainability Practices: Recent development, advances, challenges and opportunities. It further discusses research and technologies that puts society on resource efficient and low carbon development pathways (Day 1). Further, key research papers are presented (Day 2). Poster sessions are held in parallel. A plenary session climaxes the event.

General conference topics include the following:

- Sustainability Concepts and Practices
- Environmental Resources Management
- Environmental Management Information Systems
- Sustainable/Renewable Energy

- Sustainable Business/Corporate Environmental Management
- Climate Change and Adaptation
- Water resources Research and Management
- Environmental Pollution and Control
- Biodiversity Conservation
- GIS Techniques and Applications

1. Ghana

Ghana, formerly known as the Gold Coast (because of the deposition of gold bearing ores), was the first African country to the south of the Sahara to gain political independence from colonial rule in 1957. The country is named after an earlier powerful kingdom in the sub-Sahara region around the 12th century. It shares boundaries with three French-speaking nations: the Côte d'Ivoire to the west, Burkina Faso to the north and Togo to the east. The Gulf of Guinea of the Atlantic Ocean is to the south of the country. The country is generally low in its physical relief. Situated just above the equator, Ghana has a tropical climate of high temperatures and heavy rains. Gold, timber and other forest products including cocoa are the main exports. Although the Ghanaian civilization is based on African traditional culture, Christianity dominates with a considerable number of the population practicing other forms of religion such as Islam.

1.1. The Host City of Accra

The City of Accra in West Africa has been Ghana's capital since 1877, and contains fine public buildings reflecting its transition from a 19th century suburb of Victoriasborg to the modern metropolis it is today. It is the gateway to Ghana and home to many exciting and distinctive places. It is the most populous city of Ghana with an estimated urban population of 2.27 million people as at 2012. Accra serves as Ghana's economic and administrative hub and is also a Centre of a wide range of hospitals, universities, restaurants and hotels. It is a city with diversity and a cosmopolitan society. Among the highlights of Accra are the National Museum, with its splendid display of exhibits that reflect the heritage of Ghana from prehistoric times to modern times; the National Theatre with its distinctive modern architecture, the Centre for National Cultural Centre, Black Star Square, the Kwame Nkrumah Mausoleum and the fishing port at James Town. Accra, the seat of the Ga State, is today a melting pot of several Ghanaians and other foreign cultures. It is home to virtually anyone who identifies himself or herself with the city.

1.2. Ghana's Premier University

The University Of Ghana was founded in 1948 as the University College of the Gold Coast. In 2016, the University was ranked as the 7th best University in Africa. It has a current student population of 37,940, which includes 32,059 undergraduate students, 850 international students and 4,820 postgraduate students among others. Also, the university presently has 1179 senior members engaged in research and teaching.

2. Conference Highlights

- Approximately 40 oral presentations and poster presentations covering the general conference topics are the foundation of the conference
- Background and key note addresses by University leaders and experts
- Panel discussion with experts from Germany and Ghana
- A plenary highlighting key presentations and the way forward
- An online (virtual presentation) session featuring several presentations

3. Acknowledgments

The conference organizing committee is greatly indebted to:

- All participants for their manuscript contribution
- Members of the Organizing Committee and all the Session Chairs
- All abstracts and manuscript reviewers who worked very hard without remuneration
- ORID, University of Ghana, and DAAD through the University of Oldenburg for providing funding
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- Mrs. Barbara Rapp and Mr. Mohamad Hamed of Department of Computing Science, University of Oldenburg, for a wonderful work done in coordinating the publication of the Book of Abstracts and formatting the manuscripts
- Mr. Lloyd Larbi, Kofi Sarpong Adu-Manu and Prosper Adiku for work related to the conference organisation
- Josephine A. Atuobi, Deborah Agbemakor, Nana Amoako Boakye-Yiadom, Gideon Tetteh, Alfred Antwi and John Anbanye Tanye, all national service personnel of the IESS for preparing background materials for the conference and for work related to the conference proceedings.
- Prof. Chris Gordon, Director of IESS, for supporting members of the Organising Committee in organizing this conference

Dr. Daniel Nukpezah
Dr. Adelina M. Mensah
Dr. Benjamin D. Ofori

Accra, Ghana
April 19, 2017

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