

*4<sup>TH</sup> INTERNATIONAL CONFERENCE ON APPROPRIATE  
TECHNOLOGY*

**APPROPRIATE TECHNOLOGY ON WATER AND SANITATION:  
SOLUTION FOR A THIRSTY AND POLLUTED PLANET”**

**Hosted at the African University college of Communications and  
University Of Ghana Centre for African Wetlands  
Accra, Ghana, November 24-27, 2010.**

By

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## **DEDICATION**

This project is dedicated to all Appropriate Technology Team.

## **ACKNOWLEDGMENT**

My profound gratitude goes to Prof. Nwilo, P. C. for the fatherly roles played and for all the exposures and opportunities to express myself and to learn.

A million thanks to Dr. Linda Hayden for all her supports even when it was obvious I was not moving at her desired pace.

Thanks to Mr. John Oraefo for all the advice.

Sincere appreciation to all the sponsors (*Howard University, Northern California Council Black professional Engineers, National Technical Association, Council of Scientific and Industrial Research, Kwame Nkrumah University of science and technology Kumasi, Ghana*).

I will not fail to mention my mentors, Dr. Carwell and Mrs. Finley who were there for me all through the conference.

I appreciate my parents, Mr. and Mrs. Godfrey Okechukwu for their moral supports.

Thanks to Professors John Trimble, Victor Dzidziinyo, Fortunak, Dr. Tharakan, Engineer Kinyua, Madzima and all the beautiful and handsome scholars from different countries that made the conference an exciting moment for me. I love u all.

## **INTRODUCTION**

Appropriate Technology is technology that is designed with special consideration to the environmental, ethical, cultural, social, political, and economical aspects of the community it is intended for.

With environmental and ethical goals in mind, AT proponents claim their methods require fewer resources, are easier to maintain, and have less of an impact on the environment compared to techniques from mainstream technology, which they contend is wasteful and environmentally polluting.

The term “appropriate technology” came into some prominence during the 1973 energy crisis and the environmental movements of the 1970s.

The International Conference on Appropriate Technology is a biennial meeting of representatives of various organizations to focus on

- Utilizing the most effective technology to address the needs of developing areas, and
- Using socially and environmentally acceptable technologies in industrialized nations.

The conference lasted for four days, from 24<sup>th</sup>-27<sup>th</sup> November, both days inclusive.

## **DAY 1      24TH November, 2010**

### **THE OPENING RECEPTION**

The Opening reception commenced with self introduction from the Mistress of ceremony. She introduced the guests at the High Table with emphases on *Professor John Trimble and the other members of the AT team.*



The microphone was passed from one end to the other with individuals, introducing themselves. It was distracting at a certain point, when three consecutive participants introduced themselves as people who came all the way from Louisiana USA, to support one of the poster presenters (Adrienne White).

Eventually, the microphone was passed to me and I did introduce myself, stressing my name, course of study, my Institution and my beloved country Nigeria. Schools represented at the conference were;

- Howard University Washington DC, USA
- Ladoko Akintola University of Technology, Ogbomoso; Nigeria
- National University of Science & Technology Bulawayo, Zimbabwe
- Savannah State University, Georgia, USA
- University of Ghana, Legon, Ghana
- University of Kwazulu Natal Durban, South Africa
- University of Lagos, Lagos, Nigeria
- University of Swaziland, Kwaluseni, Swaziland

Cultural dance and beats from some dancing group finally launched the opening and participants walked across the servers to have dinner.



Many moved across tables, socialising and passing greetings; we all knew it was going to be a great and exciting moment at the conference, most especially for people like me, the first time participants.

## **DAY 2      25TH November, 2010**

The second day was the first full day. The bus took off at the Ange Hill hotel at 07:30 GMT. The official opening and welcoming commenced at the University Of Ghana, Centre for African Wetlands, 08:00 GMT, with Registrations of participants. This introduced us to the package prepared for all participants, the conference bag, a pen from Howard University, a red laser pointer pen, the conference proceedings booklet, flyers from AUCC and Howard University.



Immediately were the formal greetings from INAT Chair- Professor John Trimble, the Office of Vice- Chancellor University of Ghana and the opening keynote from Hon. Alban Bagbin, Ghana's Minister of Water Resources, works and Housing. All these were on till 10:00GMT, the Tea break time.



**10:30- 12:30 GMT**

### **Plenary Paper Session I: Water and Sanitation**

The first and second sessions were chaired by Dr. John Tharakan from the Department of Chemical Engineering, Howard University.



The following areas were visited during the first session:

- ✚ Appropriate Technologies for Water and Sanitation – **John Tharakan**
- ✚ Sustainable Fresh water supply for Chennai city, Tamil Nadu, India- A status Update- **Joseph Thomas**
- ✚ A Sustainable And Robust Membrane Water Treatment Unit for Potable water Production in remote Rural Areas- **V L Pillay**
- ✚ Safe Water; for Health and Wealth- **Stella O. Odaba**
- ✚ Appropriate technology and Water: Institutions of Higher Learning's role to find solutions for a thirsty planet- **Tsitsi Gate**

**12:30 – 14:00GMT**

### **Lunch and keynote speaker**

The keynote speaker during the lunch session was Mr. Kweku Botwe, The Managing Director, Ghana Water Company Ltd.

**14:00- 16:00GMT**

**Plenary Paper Session II: Sanitation and Environment** Barefoot ethics: Social Justice Through an Appropriate Technology Checklist – **Charles C. Verharen and John Tharakan**

- ✚ Placer Mining and the Guyana environment- **Tom Dalgety**
- ✚ Household willingness to pay for Improved Solid Waste Management in Osun State Nigeria- **Adepoju A. A.**
- ✚ Wastewater Minimisation In The Production of kenkey (A Traditional Ghana Corn Meal Product)- **Nii Darko Asante**

## **Panel of Appropriate technology Expert**

Joseph Thomas, Chief Technology Officer, Villgro, Chennai Indian

Kinyua Ngige, CEO, Clean Air Water, Nairobi Kenya.

John Trimble, Chair, International Network on Appropriate Technology, Washington DC

Paul Lartey CEO, CEO, Lagray Chemical Co, Founder LayGray Foundation (for research in neglected diseases), Accra Ghana.

### **DAY 3      26TH November, 2010**

The workshop and the paper sessions ran concurrently.

#### **Workshop- the mobile studio project** by Mohamed Chouikha and Kenneth Conor.

The mobile studio is a small inexpensive hardware platform for use in a home, classroom or remote environment. When coupled with the mobile studio desktop software, the system duplicates a large amount of the hardware often used to teach Electrical Engineering, Computer Engineering, Control System, Physics courses and K-12 technology-oriented courses; in addition to a myriad of industrial and commercial utilizations.



The vision of this project is to develop and deploy affordable technology and learning materials to enhance Science, Technology, Engineering & Mathematics (STEM) education; while expanding studio teaching to environments that are no longer limited by equipment access or cost issues. The goal of this project is to enable “tinkering” and “hands-on” exploration of STEM principles, devices, and systems- fostering learning at anyplace, anytime.

**8:00- 10:00GMT**

**Paper Session I: Food and Shelter**

**Session Chair- Victor Dzidzienyo**

- ✦ Potentialities of Contemporary Earth Construction Addressing Urban Housing Crisis in Africa – **Mohammad Sharif Zami**
- ✦ The role of Advanced Construction technologies In promotion Sustainable Shelter, water And Development In South Africa- **Kuchena Jabulani,Chakwiziri**
- ✦ Enhancing Crop production in Zimbabwe Through the use of Information and Communication Technology- **S.M. Nleya, T.V Nyathi**
- ✦ Business Solution For Small Scale Irrigation technologies: MEDA`s Eperience in Zambia- **Alexandra Snelgrove.**

**10:15- 12:15GMT**

**Paper Session II: Engineering, Information and Communications Technology**

**Session Chair- John Trimble**

- ✦ Innovation in Engineering education: the Mobile studio – **Peter Bofah and Mohamed Chouikha**
- ✦ Linking ICTs to Community development:: Case of Masendu community in Bulilima Mangwe District of Zimbabwe- Kudakwashe Madzima
- ✦ Using Business Roles Standard to advance E- Governance- **John Trimble**
- ✦ Are COTS- Based Systems and Appropriate Technology- **Gada Kadoda**

**Lunch and keynote speaker 12:30 – 14:00GMT**

The keynote speaker during the lunch session was Dr. Albert Wright, a honorary fellow of the British Institution of Public Health Engineers, England, and a 2009 recipient of the AMCOW AfricanSan Lifetime Achievement Award for his work in Africa on water supply and sanitation.

**14:00- 16:00GMT**

**PAPER SESSION III: Energy and Health**

**Session Chair- Joseph Fortunak**

- ✦ Charcoal as an Alternative Energy Source among urban Housholds in Ogbomoso Metropolis of Oyo State – **Okunade, E.O. (Phd)**
- ✦ A Bottom- up Approach to Energy Policy Planning in West Africa: The Case of Distributed Generation of Renewable Electricity- **Ogundiran Soumonni**
- ✦ Design Of PV Solar Home System For Use In Urban Zimbabwe- **J Gwamuri, S Mhlanga**
- ✦ Design Of A Size- Adjustable Surgical Shoe: Achieving Optimal Asepsis Comfortably- **Jason Atike ans Elsie Effah Kaufmann**

- ✚ Care Practices At Home For People Living With Aids in Accra, Ghana: The use And Management Of Household resources- **Vivian Tackie-Ofosu.**
- ✚ A Survey On The Association Between Blood Glucose levels, Hyperlipidemia And Selected Type 2 Diabetes Predisposing Risk Factors In Bulawayo District of Zimbabwe- **Shadreck Dube**
- ✚ Building Capabilities for regional Production of Quality\_ Assured Medicines in Africa- **Joseph Fortunak**

## **DAY 4      27TH November, 2010**

**Way forward- Dr. Carwell**



The floor was open for suggestions and contributions on the way forward. Below is a summary on some of the contributions made.

1. Babatunde Samuel: the fact that students need to change their mindsets should be highlighted and not confine themselves to the academic system only but broaden their view and find a way to solve the problems around them. There should be problem relevance in our teaching. Problem solving should be fused into our education.
2. Dr. John Trimble: we should be critical. We don't term a technology "appropriate" because it is in use but, we should be critical about any technology developed that we deem appropriate.
3. Babatunde Samuel: we should work together instead of presenting papers individually because, many of our projects are overlapped and work will be more efficient if we put brains together.
4. Segun Ogunlade: a technology should be introduced to control in our environment majorly in Africa. We shouldn't just go ahead developing technologies appropriate for various issues and yet continue in fear within our locality.
5. Dr. Carwell: we should pick a location, study and find out the pressing need of the society.



6. John Tharakan: research education and practice have always been the key issues of all the successful conferences but the theme should revolve around an emphasis on policies that affect the conference issues
7. Engr. Kinyua: suggested that in Kenya, there should be a need to send successful report and proposals to the ministry to affect their minds ahead of time to affirm their interest and readiness to support.

## **CONCLUSION**

The 4<sup>th</sup> International Conference on Appropriate Technology was a big success and a memorable one. The objectives were met.

Effective Technologies were utilized to address the scarcity of potable water in developing areas.