



# **ICT FOR ENVIRONMENTAL SUSTAINABILITY & ENERGY EFFICIENCY (e-Agriculture, e-Food, e-Environment)**

## **Session co-chairs**

Anwar Vahed , Research Group Leader, Meraka Institute, South Africa

Idris Rai, Vice-Chairman, State University, Zanzibar

## **Session rapporteur**

Santhi Kumaran, Associate Professor, Dept of CEIT, KIST, Rwanda

*Cape Town, South Africa - [www.euroafrica-ict.org](http://www.euroafrica-ict.org)  
4th Euro-Africa Cooperation Forum on ICT Research*





## **Panellist list**

- **Antoine Bagula, Senior Lecturer, University of Cape Town, South Africa**
- **Nawaz Mohamudally, University of Technology, Mauritius**
- **Ewan Sutherland, LINK Centre (University of the Witwatersrand) & CRIDS (University of Namur), Belgium**
- **Samuel Igbatayo, Dean, College of Business & Management Studies Igbinedion University, Nigeria**
- **Titilayo & Temitope Aladesanmi, Research Officer, National Centre for Technology Management, Obafemi Awolowo University, Nigeria**





## Setting the scene

Session objectives

### ICT for Livelihood and Well-being

*How to address the following environmental challenges in Africa using ICTs?*

■ **Atmosphere**

Air quality; Carbon cycle; Urbanization

■ **Water security (quantity and quality)**

Diminishing aquifers and major river flows  
35% of human water use unsustainable

■ **Food & Agriculture**

Sustainable land use and farming

■ **Energy**

Fossil fuels and CO2 emissions





## **Setting the scene – Ctd**

**Key questions to be raised & debated during the session**

- **Q1 - How can ICT be used to facilitate policy and strategy development for environmental sustainability and energy efficiency?**
- **Q2 - How can ICT be used to improve modeling and early identification of environmental threats?**
- **Q3 - How can ICT be used to mitigate and adapt to environmental challenges?**
- **Q4 - How can ICT be used to improve energy efficiency?**
- **Q5 - What is the (future) impact of ICTs on the environment? [Green IT, etc]**






## Report - Slide #1

**Antonie Bagula discussed about how to address the climate challenges by using sensors and bridging the gap by involving the public using the sensors by developing a community sensor network framework. The sensors can be for weather, pollution, GPS positioning etc. An alternate way of monitoring is also used by attaching the sensors in public transport.**

**The accumulation of CO2 leads to global warming and ocean acidification. Nawaz Mohamudally explained about the impact of carbon dioxide and its effect on coastal sea water acidification. The pH of seawater is used to calculate the CO2 content. Mobile data collection system with GPS as well as sensors connected to the smart phones of the citizens are used to detect CO2 pollution in atmosphere.**

**Ewan Sutherland explained about how the telecom sector contributes to the climate change. If telecom power stations use alternative sources CO2 emissions can be reduced. Emerging ICTs (smart homes, smart grids) have significant emission and contributes to GHG. Should go for policy considerations to reduce global emissions.**



A large, stylized world map in shades of orange and brown, centered on the Atlantic Ocean, with a grid overlay. The map is set against a background of horizontal light streaks and a grid pattern.

## Report - Slide #2

*(summary part II)*

**Samuel Igbatayo discussed about using ICTs for transformation of agriculture sector in Africa and addressing the challenges & opportunities.**

**Temitlope Aladesanmi addressed about the environmental impact due to e-waste. The emissions from the e-waste (electrical & electronics goods) are toxic. Major drivers of e-waste are (i) lack of technical knowhow to reuse (ii) lack of maintenance culture (iii) short life span of components (iv) uni-direction of e-waste (v) non-availability of parts(vi) rapid technological changes etc.**

**The main concern is about the e-waste disposal methods. Mostly they are used as landfill and as the e-waste has toxic elements it is a big environmental threat.**





## **Report - Summary**

**The recommendations that emerged out of this session are as follows:**

- **Public Community should be encouraged to fight against climate change by using sensors.**
- **Policy for controlled emissions is very important.**
- **Incentives can be given to the telecom company who takes measures to reduce CO2 emission.**
- **Proper harnessing of ICT to reduce environmental challenges**
- **Mobile phones could be used for environmental sensitisation about e-waste**

