# THE AFRICAN TECHNOPOLITAN

A MAGAZINE OF THE AFRICAN CENTRE FOR TECHNOLOGY STUDIES (ACTS)

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# THE BIRTH OF A NEW SCIENCE AND TECHNOLOGY MAGAZINE:

THE AFRICAN TECHNOPOLITAN

he African Centre for Technology Studies (ACTS) is delighted to present to you the African Technopolitan: a biannual, multidisciplinary magazine on science, technology and innovation in Africa. The African Technopolitan seeks to explore ways of harnessing applications of science, technology and innovation policy for the improvement of the human, social, economic, political and environmental condition in Africa.

The major development challenges facing Africa—ensuring food security, universal access to clean water, sustainable energy access for all, adapting to and mitigating the impacts of climate change, fighting infectious diseases, and conserving biodiversity — can easily be tackled by harnessing applications of science, technology and innovation.

ACTS was the first and is one of the best known international think tanks working on issues of science, technology, innovation, economic development and environmental change in Africa.

Since our establishment in 1988, we have published many seminal studies on African development; opened up the African development policy space; strengthened capacity of African industrial, technological and educational institutions. We have provided an evidence informed platform for key stakeholders in African development to come together to explore sustainable solutions to Africa's development, environmental and climatic challenges.

Through partnerships with leading global universities and research institutes, we have provided doctoral, MA and certificate level training in science, technology and innovation policy to hundreds of African graduates. Many of these now serve as leading science policy experts, scholars, judicial officers, public servants, and leaders of industry, NGOs and regional economic communities.

Through quality research, high level policy dialogue, capacity building and brokerage of knowledge and technology transfer, our work has changed lives, livelihoods and landscapes. We have provided a wide range of policy options for accelerating sustainable development in Africa, with particular reference to the following sectors: biotechnology and biosafety; agriculture and food security; energy and water security; climate change; international trade and intellectual property rights; multilateral environmental agreements, natural resource management and environmental protection; industrial, technological and human resource development.

Our goal is to inspire, facilitate, catalyse and broker dialogue, debate, policy analysis, research, and capacity building on harnessing applications of science, technology and innovation for sustainable development in Africa. We seek to enhance the capacity of African countries, organizations and individuals not only to set but also to successfully implement their own science, technology, innovation and economic development agenda. As argued elsewhere in this issue, there are many successful paths to development but a superior one appears to be that which enhances 'capabilities accumulation' or one anchored in learning technological capabilities, and how to co-evolve compatible and best-fit organizational and institutional arrangements (markets, forms of government, property rights, etc.) often through experimentation and innovation.

Differences in the patterns of accumulation and processing of information and knowledge are at the heart of differential development outcomes among countries. Approximately 60 per cent of the difference in income between Sub-Saharan African countries and the advanced economies is attributable to gaps in the stock of knowledge. Fourteen percent of the world's population live in Africa yet only 1% of the world's scientists do. A continent of over a billion people and 54 countries has about the same amount of research output as the Netherlands. Africa has only 35 scientists and engineers per million inhabitants compared with 130 for India, 168 for Brazil, 450 for China, 2,457 for Europe and 4,103 for the United States. At 7 percent, Africa has the world's lowest tertiary enrolment rate compared to a global average of 30%.

A first order development challenge for Africa is therefore one of enhancing 'capabilities accumulation': accumulation of human capital, knowledge, technological learning capabilities and institutional autonomies, experimentation, innovation and competencies (i.e. well-functioning markets, states and civil societies; independent judicial

systems and media; efficient policies and property rights systems, et cetera). African countries have in their own hands, the choice to design their future paths of 'capability accumulation', their patterns of production and trade, their place in the future international division of intellectual and physical labour. This pathway runs through harnessing applications of science, technology and innovation.

At ACTS, we have been helping African governments, organizations, communities and individuals to harness applications of science, technology and innovation for better livelihoods, landscapes and ecosystems since 1988. We remain committed to this mission. We would like you to join us. The African Technopolitan welcomes contributions that offer constructive, provocative and original ideas. analysis and commentary on how science, technology and innovation can be harnessed to address Africa's fundamental development challenges: enhancing agricultural productivity and food security; sustainable energy access for all; universal clean water access; sustainable biodiversity conservation and use; climate change adaptation and mitigation; industrial development; infrastructure and human resource development. We invite submissions of not more than 2500 words from across academic disciplines and policy spheres. We are particularly interested in submissions that are multi or interdisciplinary, based on empirical work, advance original or alternative theories; and challenge conventional schools of thought on contemporary issues in science, technology and innovation policy research and practice in African development.

In this first issue of the African Technopolitan, we share highlights of some of our research, capacity building and policy work in the first half of 2014. We also highlight some of our planned key activities in the second half of the year. A quick look at some of our alumni invites you to reflect on our journey over the last two and a half decades. Through two opinion pieces, our Executive Director, Dr. Cosmas Milton Obote Ochieng, takes a critical look at the potential role of science, technology and innovation in Africa's economic development within the context of the 'Africa rising' narrative and US Economic Diplomacy in Africa.

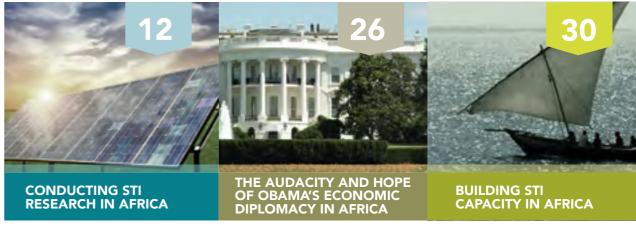
In subsequent issues of this Magazine, we will open it up to policy and research insights, analysis, commentary, opinions and other forms of relevant submission by members of the public.

This is your Magazine! We look forward to sharing your brilliant ideas on how to harness science, technology and innovation for the general improvement of the social, economic, political and environmental condition in Africa!

> Dr. Cosmas Milton Obote Ochieng Executive Director. African Centre for Technology Studies



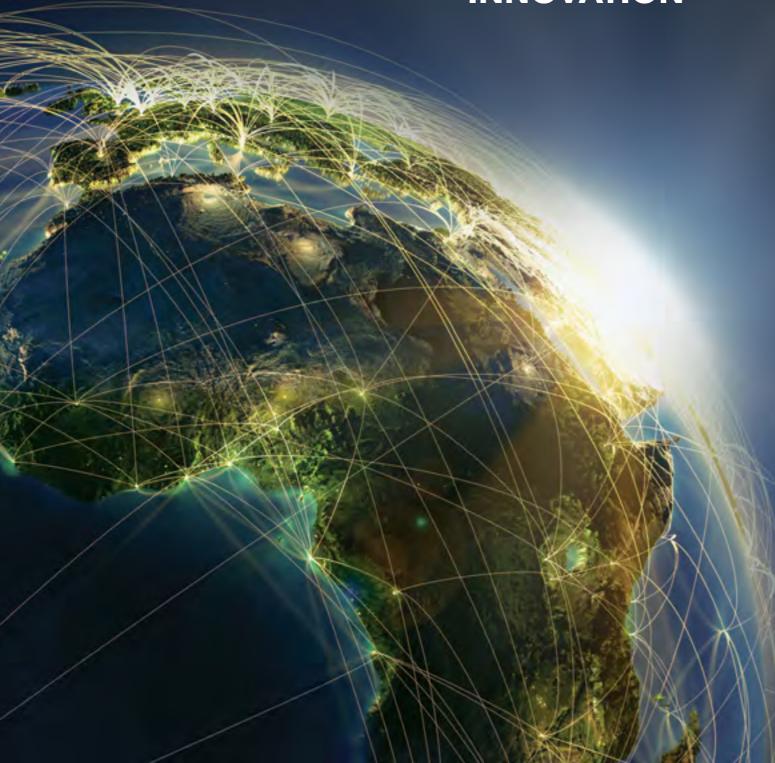






# AFRICA RISING?

NOT WITHOUT SCIENCE, **TECHNOLOGY AND INNOVATION** 



Dr. Cosmas Milton Obote Ochieng Executive Director,
African Centre for Technology Studies

In spite of the worst Ebola outbreak in history, brutal civil wars in South Sudan and the Central African Republic, and a shocking economic turn of events in Ghana, Africa continues to enjoy perhaps the most positive and optimistic international media, business and political sentiment in a generation. This sentiment is encapsulated in the increasingly ubiquitous 'Africa rising' narrative. For a continent that has had many false starts at 'development', the 'Africa rising' narrative is surprisingly resilient. But how much of this resilience is rooted in 'economic fundamentals' and how much of it is 'mere rhetoric'?

n this piece, I argue that the Africa rising narrative is rooted not in 'structurally resilient factors' endogenous to African economies (i.e. Africa' 'capabilities accumulation' or structural transformation) but rather in 'irrational exuberance' and transitory external factors, a couple of which have little if anything to do with African 'agency' (i.e. China's rise, Eurozone recession and the ensuing 'euro-pessimism'). Africa can and will only 'rise', through a systematic, laser-like, national, regional and continental scale effort to harness applications of science, technology and innovation for structural transformation and sustainable development.

To be sure, Africa has experienced high economic growth, increased foreign direct investment and arguably, falling aggregate poverty rates over the last decade. Many of the world's fastest-growing economies over the past decade were African. Some African countries are on the cusp of potentially significant demographic changes, natural resource utilization, economic and political liberalization. These are all good 'pre-conditions' for structural transformation or economic development. Compared to Africa's lacklustre economic performance in the 1970s through the 1990s, this also constitutes real progress. Nonetheless, all this is still short of the necessary and sufficient conditions needed for structural transformation and sustainable development in Africa. Much of what forms the basis of the Africa rising narrative (e.g. GDP growth) does not constitute a good measure of economic development. When more helpful measures are Africa rising narrative widens.

Africa is still predominantly engaged in activities that yield diminishing returns to scale. Economic development entails a structural shift from activities that largely provide diminishing returns to those that provide increasing returns in the 'long term'. Since at least the 15th century, the source of increasing returns for virtually all the now developed or advanced economies has been manufacturing (i.e. industrial development) and knowledge intensive service sectors. Africa is nowhere near any significant gains in these two sectors. On the contrary, a number of African countries appear to have undergone stagnation or decline in terms of their industrial development over the last decade. At any rate, the industrial and knowledge gaps between Africa and the world's most advanced economies continue to widen.

This should give African policymakers, trade negotiators, educators, climate change planners and environmental managers, pause. A 2011 report by the UN Conference on Trade and Development (UNCTAD) and the UN Industrial Development Organization (UNIDO) found that the share of Manufacturing Value Added (MVA) in Africa's GDP fell from 12.8 percent in 2000 to 10.5 percent in 2008. The share of manufactures in Africa's total exports also fell from 43 percent in 2000 to 39 percent in 2008. A whopping 23 African countries had negative MVA per capita growth from 1990 to 2010. Africa's share of low-technology manufacturing activities in MVA also fell from 23 percent in 2000 to considered, the gap between the 20 percent in 2008, and its share of

substance and the rhetoric of the low-technology manufacturing exports fell from 25 percent in 2000 to 18 percent in 2008.

> For the most part, Africa is still a natural resource based economy. The recent high GDP growth in Africa can be partly attributed to the global 'commodity boom' driven in part by growing consumption in China and India. This commodity dependence is not conducive to 'inclusive growth' which is needed and necessary to lift the many millions of people that Africa needs to lift out of poverty for it to undergo an effective economic transformation. Commodity and resource based sectors do not usually generate the employment opportunities that would allow the majority of the population to share in the benefits. Rather, they tend to encourage 'enclave development', regional and income inequalities which might in turn constrain economic diversification and long term growth.

> Commodity dependence is also not a sustainable development strategy in the long run. Africa's long term productivity gains will come not from natural resource extraction, but from advances in, and applications of, science, technology and innovation. Differences in the patterns of accumulation and processing of information and knowledge are at the heart of differential development outcomes among countries. There is increasing consensus among economists that at least half, if not more, of the economic growth in advanced countries is directly attributable to science, technology and innovation. Approximately 60 per cent of the difference in income between Sub-Saharan African countries and the advanced economies is attributable

to gaps in the stock of knowledge. It is now widely acknowledged that knowledge or technology-intensive sectors are growing faster than other sectors. For African countries interested in raising their long term rate of growth, this requires a structural shift from a focus on low technology or knowledge intensive sectors to high technology or knowledge intensive sectors.

Sectors and products matter in terms of learning technological capabilities or capabilities accumulation and economic development. Specific technologies, sectors and products matter because they entail different learning opportunities, different income elasticity of demand, different opportunities to innovate and different opportunities to contribute to economic development. Capacity to develop and successfully implement 'industrial policies' that reward technologies, sectors and products that contribute the most to capabilities accumulation and by extension to economic development is therefore a key need in Africa.

There are many successful paths to development but a 'superior' one appears to be that anchored in 'capabilities accumulation' or learning technological capabilities, and how to co-evolve compatible and best-fit organizational and institutional arrangements (including but not limited to markets and states), often through experimentation and innovation. A first order capacity need and Between 2000 and 2010, the Govchallenge for Africa is therefore one of enhancing 'capabilities accumulation': accumulation of knowledge and capabilities, at the levels of individuals and organizations. African countries, like all countries globally, have in their hands, the choice to design their future paths of capability accumulation, their patterns of production and trade, the future international division of intellectual and physical labour. This requires purposive policy making and policy trade-offs. A first order policy choice must be to anchor the African development agenda in science, technology and innovation.

Africa has about 35 scientists and engineers per million inhabitants, compared with 130 for India, 168 for Brazil, 450 for China, 2,457 for Europe and 4,103 for the United States. At 7 percent, Africa has the world's lowest tertiary enrolment rate compared to a global average of 30%. Fourteen percent of the world's population live in Africa yet only 1% of the world's scientists do. A continent of over a billion people and 54 countries has about the same amount of research output as the Netherlands. While these figures are abysmal, the situation can be turned around. South Africa's innovation led development strategy over the last decade attests

At any rate, the industrial and knowledge gaps between Africa and the world's most advanced economies continue to widen.

to this. A multitude of government initiatives between 2000 and 2010 resulted in significant impacts on the country' research and development

ernment of South Africa launched a series of science, technology and innovation initiatives:

- The 2003 decision by the Department of Education to introduce the New Funding Formula (NFF) for institutions in higher education. According to the NFF, higher education institutions receive financial support on the basis of their research outputs (number of publications and number of postgraduate students produced).
- The decision in 2001 to bring the social sciences in line with the natural sciences and engineering in participating in the evaluation and rating by the National Research Foundation (NRF), which is based

- solely on previous research outputs and performance.
- An aggressive Science Diplomacy that saw South Africa initiate extensive bilateral and multilateral scientific cooperation agreements with African, European, American and Asian countries as well as with the African Union, the UN system, private foundations, donors, multinational companies and global research infrastructure projects. The International Cooperation and Resources Programme of the Department of Science and Technology (DST) opened offices in Tokyo, Moscow, Brussels, Gaborone (SADC Headquarters) and Addis Ababa (AU Headquarters) while other arms of government such as the Department of Foreign Affairs, the Department of Trade and Industry and National Research Councils pursued their own parallel scientific cooperation initiatives.
- The 2007 launch of the 10 Year Innovation Plan and the establishment of the Technology Innovation Agency and the South African National Space Agency (2008). The Innovation Plan effectively served as an 'Industrial Policy' for the country, choosing 'winners' and setting high objectives for the country's national innovation system based on its development needs:
- To be one of the top three emerging economies
- in global pharmaceutical industry based on an
- expansive innovation tem and the country's indigenous knowledge and rich biodiversity
- To deploy satellites that provide a range of scientific, security and specialised services for the government, the public and the private
- To achieve a diversified, supply secured sustainable energy sector
- To achieve a 25% share of the global hydrogen and fuel cell catalysts market with novel platinum group metal catalysts.
- To be a world leader in climate science and the response to climate
- To meet the 2014 Millennium Development Goal to halve poverty

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#### **Ecofriendly**



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- 2-year warranty

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The results have been encouraging. The country more than doubled its scientific publications from an average of 3500 between 1980 and 2000 to 7468 by 2010. South Africa also overtook Argentina, New Zealand, the Ukraine and Hungary in country ranking by publications between 2000 and 2010, improving its ranking by two positions in global ranking.

An analysis of South Africa's scientific performance during 2000-2010 shows that research publications in South Africa are on an ascending path, and the country's world share of publications is on the verge of reaching the highest contribution in history. An analysis of the world share and activity indices of 22 scientific disciplines for the two periods 2000-2004 and 2006-2010, shows that only geosciences, molecular biology and multidisciplinary research experienced a decline.

An analysis of the relative citation index (an indicator of research quality) of the various disciplines for the period shows that only three disciplines dropped in ranking (computer science, molecular biology and psychiatry/psychology) with the country's overall relative citation index moving from 0.69% in the 2000-2004 to 0.88% in the 2006-2010 period. (All these analyses are drawn from Pouris, A. 2013. Science in South Africa: The Dawn of a Renaissance? (http://web.up.ac.za/sitefiles/ file/44/1026/2163/8121/Innovate%208/6770%20Scince in South\_Africa\_The\_dawn\_of\_a\_renaissance%20by%20Prof%20 Anastassios%20Pouris.pdf)

To cap it all, in 2012, South Africa won a joint bid to host the world's largest science project, for a radio telescope called the Square Kilometre Array (SKA). SKA's satellite dishes will ultimately involve Australia, New Zealand and eight sub-Saharan countries. When complete, SKA could be the world's single largest source of data advancing the space, security, public, private and government objectives of the South African 10 year Innovation Plan.

South Africa provides an example of what a national development strategy centred on innovation and a knowledge economy can achieve. Progress has been made even in African countries without an explicit science and technology led development strategy. Over the last decade, the number of research papers published in scientific journals with at least one African author more than quadrupled (from about 12,500 to over 52,000, between 1996 and 2012). During the same time, the share of the world's articles with African authors almost



A first order capacity need and challenge for Africa is therefore one of enhancing 'capabilities accumulation': accumulation of knowledge and capabilities, both at the levels of individuals and organizations.

doubled from 1.2% to around 2.3%. As with the South African case study. a multiplicity of initiatives accounts for this: increased funding for research and incentives for publishing, improved human and physical research infrastructure, increased access to ICT resources, including access to open, free and low cost peer reviewed

scientific literature, research capacity building and internal policy reforms. All this suggests that a science, technology and innovation led development strategy is not only within the grasp of virtually every single African country but that the yields from such a strategy are considerable.

There are no one size fits all policy prescriptions in development but in general, such a strategy might include the following:

- A National Science, Technology and Innovation Policy for Development Strategy
- A Presidential Level National Innovation, Science and Technology Council; or A National Innovation or Scientific Advisor or Office;
- A National Technology Foresight Office/National Technology Foresight Studies/National Research Agenda
- A National Science Diplomacy: Promotion of Science and Technology Cooperation with a number of strategic countries and partners. Could include appointment of Science Attaches or envoys in African diplomatic missions; encouraging foreign missions to post science attaches/envoys to African countries
- A research/innovation centred approach to funding institutions of higher learning
- National Innovation/Science Medals or Awards to promote scientific achievement and innovation
- The creation of an African Research Area or regional cooperation in scientific research
- 'Industrial Policy' Choosing 'Strategic Winners' relative to the country's development interests and directing national effort towards ensuring global competitiveness in selected sectors
- A Science Diaspora Policy to make the most of the African expertise in the diaspora
- 'Capabilities Accumulation': developing capacity of institutions to work: state, market, judiciary, civil society, academic etc.
- Fiscal Incentives: tax and subsidy incentives for R&D investments; technology incubation; imports, product and process innovation



# ACTS LAUNCHES A NEW STRATEGIC PLAN 2014-2018

#### We are excited to launch our new Strategic Plan 2014: 2018:

Accelerating Africa's Transition to Inclusive Knowledge and Green Economies. Our Strategic Programme Priorities over the next five years are fivefold:



Digital Economy for sustainable development in Africa.



Harnessing applications of biosciences, bio resources and biotechnologies for sustainable development in Africa.



Promoting livelihoods and ecosystem resilience in Africa; climate resilient African infrastructure



Natural capital accounting, valuation, assessment and pursuit of the Triple Bottom Line (planet, people and profit; Land Information Management System (LIMS) and Environmental Information Management System (EIS) for Sustainable Development in Africa.



Enhancing the capacity of the African youth, women and other marginalized groups to harness applications of science, technology and innovation policy for sustainable development.

# CONDUCTING STI RESEARCH IN AFRICA

#### **ACTS WINS FOUR NEW RESEARCH GRANTS!**



# Global knowledge sources and local shaping of technology

Inclusive community electrification with renewables in Kenya

(DANIDA, USD 1.8M).

As the global climate change regime moves ahead towards 2020, there will be increasing investments related to climate change mitigation and adaptation in poor countries. Ensuring that the most adequate technologies are selected and that they are diffused and used in such a way that the outcome is better living conditions for the population is a major challenge.

This project studies two specific low-carbon technologies – solar photovoltaic and wind power – and it takes as its starting point the role international sources of knowledge can play for Kenya. It will explore whether or not actors originating from China have the potential to provide particularly relevant low carbon technologies that bring benefits to the poor in Africa as compared to actors from Denmark and Germany.

The project will also examine public policies, institutional settings and participatory organizational forms necessary to realize the goal of sustainable energy for all in Kenya. The project will combine quantitative analysis including use of survey data with qualitative analysis and case studies. Interactive learning with policy makers and other stakeholders is an integral part of the project design.

This is a four year research and capacity building project that ACTS will implement jointly with Aalborg University (Denmark) and Moi University (Kenya).

The approach to the implementation includes research, capacity building through PhD Fellowships, attachment and supervision at ACTS for exposure to policy and practice. This project has a total value of approx. US\$ 1.8million of which ACTS will receive around US\$ 600,000 over 4 years. The project will allow us to bring innovation systems analysis and thinking into the renewable energy sector in Kenya. This will enhance both our growing niche in the renewable energy sector, but also our emerging emphasis on innovation systems analysis and thinking more generally and the economics of science, technology and innovation policy and development, more specifically.

# The INASP (International Network for the Availability of Scientific Publications)

Kenya Climate Science, Technology and Policy Roundtable

# ACTS has won a Vakayiko Small Grant from INASP!

This grant will allow us to:

- Establish a Quarterly Kenya Climate Science, Technology and Policy Roundtable to facilitate evidence informed decision making in the formulation, passage and implementation of both the Kenya Climate Change Bill and the Kenya Climate Policy;
- Establish a Non-residential Policy Fellowship for two senior climate change policy makers at ACTS
- Support two senior researchers to 'Job Shadow' two policymakers as they formulate, legislative and ultimately implement both the climate bill and policy. The idea is that the researchers would gain a much better appreciation of the policy making process itself, while acting as a readily available 'bridge' between the policy makers and researchers/research evidence.

### 3 EPSRC (UK)

#### The Next Generation of Low-cost Energy-Efficient Products for the Bottom of the Pyramid

This is a joint project involving ACTS, the Open University in the UK and university and private sector actors in the US and Bangladesh. This project adds to our now considerable portfolio and expertise in renewable energy. The project entails technology, knowledge and policy brokerage; research; technology incubation and capacity building.

# 4 DFID-ESRC

#### Examining Disability and Inclusive Agricultural Development in Four African Countries.

ACTS won this grant jointly with University College London (UK) and a large consortium which includes:

University of East Anglia (UK); University of Cape Town (SA); University of Fordham (US); UIU (Bangladesh) and NWH (Tanzania). The project enhances our collaboration with high profile global and regional universities and allows us to refine our work in harnessing applications of STI for 'inclusive development', a growing paradigm in development theory and practice.



### **ACTS AFRICALICS PROJECT AWARDS USD 160,000 IN RESEARCH GRANTS!**

African Network for Economic Learning, Innovation and Competence Building System (Africalics) whose Secretariat is hosted at ACTS has awarded USD 160,000 in small grants to facilitate research on relatively neglected areas in science, technology and innovation policy in Africa. The grants are also designed to promote interdisciplinary and cross sectoral collaboration among African researchers.

#### The 6 grantees and projects are as follows:

Name of grantee/s	Institutional affiliation	Name of project	Project duration
Abdi Yuya Ahmad	Adama Science & Tech- nology University	Natural Resource En- dowment and Innovation Behaviour of Firms	11 Months
Prof Mammo Muchie	Tshwane University of Technology (TUT)	Engineering Design Capacity Building and Economic Development in Africa	15 Months
Dr. Radhika Perrot	Mapungubwe Institute for Strategic Reflection (MISTRA)	Building low carbon in- novation energy systems in Africa	12 Months
Dr. Williams Ezinwa Nwagwu	University of South Africa (UNISA)	The Role of Women in Science and Technology Innovation in Grassroots Agriculture in Africa	15 Months
Erika Kraemer-Mbula	Institute for Economic Research on Innovation	Work organization, competence building and innovation in formal and informal micro- enterprises in Africa	15 Months
Dr Simon Roberts	Centre for Competition, Regulation and Econom- ic Development University of Johannes- burg	The Southern African regional value chain for mining inputs: An opportunity to build regional technological capabilities in the mineral and nonmineral sectors?	5 Months

Africalics is a 3-year USD 1.8 Million Project funded by Sida through Alborg University in Denmark. To learn more about thae Africalics programme, please visit: www.africalics.org.



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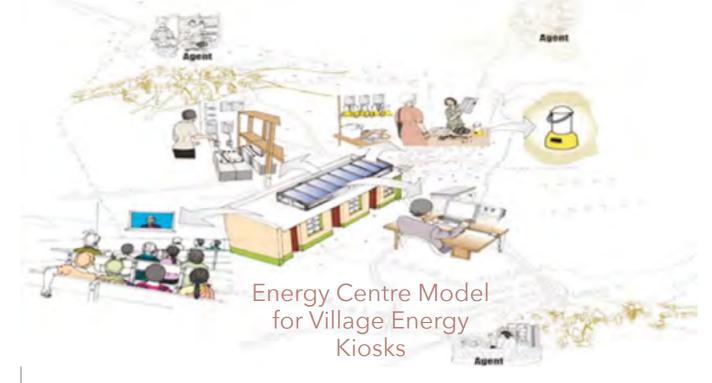


This is a project being undertaken by ACTS through a DFID-TERI partnership. It seeks to pilot clean lighting and improved cook stove solutions that can be scaled up to enhance sustainable energy access for all in Kenya. This is being done through a review of existing technological solutions and business models as well as identifying barriers to the promotion of clean energy options.

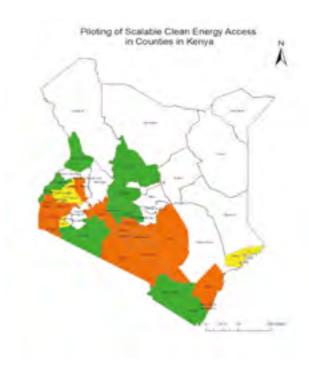
A number of project activities have been implemented this year:

- Ten forced draft cook stoves for Kitchen Performance Tests (KPT) were deployed in five households in Nakuru • between Jan and March.
- Controlled Cooking Test (CCT) and KPT for 3 distinct stove models were conducted in Nakuru.
- Water Boiling Tests (WBTs) on the modified low cost cook stove were conducted in Nakuru in May.
- 1576 solar clean lighting devises, 3415 natural draft improved cook stoves and 34 Forced draft improved cook stoves were disseminated between March and June.
- Training for solar centre technicians in Ikisaya, Kitui County was carried on 12th to 14th February. A similar training was conducted in Nyakach, Homabay County on 19th February for 42 participants.
- 7 stove fabricators were trained at SCODE Ltd. 3rd -9th February on fabrication of modified low-cost

- forced draft cook stove as a replica of IDEC.
- An introductory training for 406 farmers was conducted on 25th April in Kericho.
- A workshop was held on 19th June in Nairobi that brought together 30 micro finance institutions. During this workshop, ACTS presented a proposal on how these institutions can finance clean energy access.
- ACTS participated in the Global Alliance for Clean Cook stoves (GACC) conference from 4th to 5th February. Over 300 participants were in attendance
- ACTS convened a stakeholders' forum on 11th June, in Nairobi which brought together 40 participants to discuss opportunities and challenges in facilitating dissemination of solar energy products in Kenya.
- ACTS participated in the National Clean Cook Stoves and fuels conference held at Safari Park on 4th -7th March.







Map showing lighting systems dissemination in different counties Legend:

- Orange color represent counties with households who have adopted clean energy for lighting and cooking;
- Green color represents counties with households who have adopted clean energy for cooking only and;
- Yellow color represents counties with households who have adopted clean energy for lighting only.







#### **PHD FELLOWSHIPS:**

**GENDER AND HORTICULTURAL VALUE CHAINS** 

ACTS is hosting 3 PhD students from Humboldt University in Berlin under the "Diversifying food systems: Horticultural Innovations and Learning for Improved Nutrition and Livelihood in East Africa" (HORTINLEA) Project.

- · PhD project- Gender Order: Embedding gender in Horticultural value chains to close or reduce the productivity gap? Emma Oketch, Humboldt University, Berlin
- PhD project "Gender Order: Embedding gender in Horticultural value chains to close or reduce the productivity gap? Catherine Mawia, Humboldt University, Berlin
- PhD project Market Trends and Consumption Habits - Meal Culture". Anne Aswani Jomo Kenyatta University of Agriculture & Technology (JKUAT).

All the PhD Fellowships will run for three years.





This study was commissioned by FAO in December 2013 and sought to highlight post-harvest losses incurred within the agri-food chain and the energy access situation in Sub- Sahara Africa (SSA). The study was concluded in June 2014. The study found that lack of appropriate storage facilities is the main factor contributing to post harvest losses with abiotic factors such as poor weather, insect infestation and lack of access to modern energy being cited as major barriers to improved storage especially for cereals and fruits.

he report also explored the potential for using residues from local wood industries to generate energy for use in postharvest stages of the agri-food chain, taking into consideration sustainability aspects. The case studies highlighted good practices to reduce food losses using energy and the use of residues from local wood industries to produce energy for local purposes including post-harvest stages of agri-food chains.

One more case study was presented with a discussion of possible competing uses of residues including animal feed, soil fertility, and bioenergy.

Depiction of main PHL and storage mechanisms with possible wood residues potential for energy provision within agri-food

The report concludes that electrification rates are rapidly increasing and the situation is likely to change if resources are well allocated. The potential renewable energy reserves in individual countries if fully

tapped might have a significant impact on food security in Africa. Utilization of crop residues for other purposes other than soil amendment is likely to lead to more inorganic fertilizer application or reduced harvest in poverty struck rural areas where fertilizers are not affordable.

In order to realize the fruits of modern energy in agriculture, planners and farmers have no choice but to embrace energysmart food as part of climate smart agriculture.

#### PILOTING COMMERCIAL PRODUCTION AND EFFICIENT USE OF BRIQUETTES FROM SUGARCANE BAGASSE FOR RURAL HOUSEHOLDS IN THE SUGAR BELT REGION OF KENYA



This project is being implemented by ACTS in partnership with ELCI and KEFRI. The project will run for 18 months following its launch in April 2014. It is funded by the Governments of Finland, Austria, and UK and hosted by the Development Bank of Southern Africa (DBSA).

he overall goal of this project is to enhance a sustainable supply of renewable energy for rural communities in the sugar belt region of Kenya. It adopts an integrated approach and a business model in its implementation by recognizing the role of different actors particularly the financial institutions and private sector in enhancing the sustainability goal. The specific objectives are to i) develop and demonstrate efficient techniques

of briquette production and usage from sugarcane bagasse to meet rural household energy needs ii) develop financing mechanisms to encourage local private sector investment in briquette making and improved cook stove supply chain iii) build capacity of associations of local briquette and rocket stove manufactures to actively participate and influence market decisions in renewable energy sector iv) create awareness

on the benefits of bagasse briquettes and its efficient use and social acceptability.

The expected outputs include production of quality evidence that will be applied at different levels by local communities, small and medium entrepreneurs and other market players including financial institutions towards influencing policy and practice.

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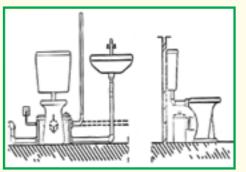
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CTS in collaboration with REPOA in Tanzania, and the Open University (UK) have recently concluded a research project entitled "Industrial Productivity, Health Sector Performance and Policy Synergies for Inclusive Growth: A Study in Tanzania and Kenya". The study identified opportunities for improved supply of essential medical commodities to strengthen health system performance.

ACTS is convening a High Level Policy Dialogue on September 17th, 2014 to share the findings of the study and to explore opportunities for improving health performance and economic productivity in Kenya and Tanzania. The policy dialogue workshop will bring together key stakeholders in the health, medical and pharmaceuticals supply chains in East Africa from regulators, manufacturers, importers to industry associations.



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SCODE LTD is a for-profit social enterprise limited by shares incorporated in April, 2008 in accordance with the companies Act (cap486) of the laws of Kenya. It's an offshoot of SCODE NGO which has lots of experience in the formulation and implementation of community based renewable energy projects

SCODE LTD produces and promotes a wide range of renewable energy technologies that guarantee performance and efficiency. They are made from longlasting materials and high quality workmanship. These include Improved cook stoves (jikos), solar products, biogas / biolatrine systems and other products and services.

Scode ltd regions of operations include Nairobi region (Nairobi, Kajiado, Machakos, kiambu, Makueni, Kitui), Mt. Kenyaregion (Meru, Embu, Isiolo, Kirinyaga, Muranga, Nyeri, laikipia), South Rift region (Baringo, Nakuru, Nyahururu, Narok, Bomet, kericho), North Rift region (Uasingishu, Nandi, Transzoia, ElgeyoMarakwet, Pokot), West Kenya region (Bungoma, Busia, Kakamega, Siaya, Vihiga), Nyanzaregion (Kisumu, Kisii, Nyamira, Homabay, Migori, Transmara)













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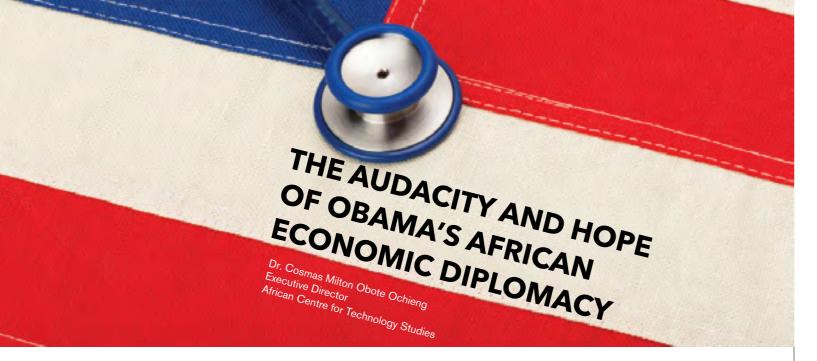
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Buffeted by the crises in Ukraine and the Middle East, the Obama administration's foreign policy is increasingly characterized as 'weak' or 'failing'. Time will be the ultimate judge of Obama's overall foreign policy. There is one place however, where Obama's foreign policy cannot be easily caricatured as 'failing' or 'weak': sub Saharan Africa. Indeed, Africa provides the Obama administration with perhaps its last best hope for a globally transformative foreign policy initiative. This might come as a surprise to many - including in Africa. Obama's Initiatives in Africa, like many of his initiatives elsewhere, haven't received robust publicity and marketing as one might have expected from a US Presidential Level Global Initiative.

otwithstanding its inability to effectively communicate its African economic diplomacy, the Obama administration has arguably some of the boldest, audacious and innovative economic diplomacy initiatives in Africa since the 1960s. Broadly speaking, the Obama African Economic Diplomacy is anchored in three main initia-

- The Power Africa Initiative
- The New Alliance for Food Security and Nutrition Initiative
- The Young African Leadership Initiative (YALI) or the Washington Mandela Fellowship Programme.

Each of Obama's Africa Initiatives is bold, audacious, and innovative. Each has the potential to significantly and fundamentally change not only development conditions in Africa, but US-Africa relations as well as relations between Africa and the rest of the world. All three initiatives are still in early stages and they might yet go the way of many past economic interventions in Africa. So far, however, so good.

The Power Africa Initiative seeks to double the number of people with access to electricity in Africa within 5 to 10 years. Nothing could do more to alleviate poverty and accelerate Africa's social and economic transformation than improved access to power. Two out of three sub Saharan Africans or 600 million people, lack access to electricity. Lack of access to energy constrains economic growth, perpetuates the cycle of poverty and aggravates biodiversity degradation through deforestation and habitat

By leveraging US and African resources, private sector and technologies to unlock Africa's enormous potential in wind, solar, hydropower, natural gas, and geothermal sectors, the Power Africa Initiative seeks to enhance energy security, decrease poverty, and advance economic growth in Africa, using a development model that encourages African ownership, innovation, technology transfer and sustainability. It is a sound development policy and smart economic diplomacy. While China is focused laser-like on the low knowledge intensive, natural resource and infrastructure sectors in Africa, the US Power Initiative leans towards a more sustainable long game: knowledge intensive, renewable energy sectors (although the Power Initiative does include oil and gas in Uganda and Mozambique).

From an initial 5-year US Government commitment of 7 billion dollars, the project has leveraged 14 billion dollars in private sector investment commitments.

The New Alliance for Food Security and Nutrition Initiative seeks to lift 50 million people out of poverty within the next 8 years. The Alliance Initiative employs the same business model as the Power Initiative: leveraging African and US (and in this case global) financial resources, political will, private sector, science and tech-

nology to address the problem of hunger and food insecurity in Africa. Now in its second year, the Initiative has made progress against 96 percent of the policy actions it had set for itself by this time.

It is still early days, but in the practice of international development and foreign aid, this is not a figure to sniff at. Neither is the figure of more than 160 companies (two thirds of whom are African) already engaged in the Initiative.

In the summer of 2014, 500 young, smart, promising next generation African leaders, aged 25-35 years descended on American universities, colleges, research institutes, government departments, corporate and civil society offices for a 6-week leadership training as part of President Obama's Young African Leaders Initiative (YALI) or the Washington Mandela Fellows Programme.

These Fellows also got an opportunity to hold a Summit with President Obama just before the US Africa Summit. Many of these young African leaders got to meet the US president before meeting their own African presidents.

YALI is one of the largest US Government facilitated academic exchanges between Africa and the US since the 'Kennedy Airlift' of the 1960s that saw many first generation post independent African leaders and scholars study in the US, including among others, Barack Obama Senior and Kenya's environmentalist and Nobel Peace Prize winner, Prof. Wangari Maathai. YALI is a long-term investment - and a bet - on the African Youth.

It seeks to accelerate democratic and political development in Africa and to strengthen US-Africa ties. The Obama administration has been running various aspects of YALI, including more than 2000 Africa African youth programs since at least 2010 (e.g. the President's Young African Leaders Forum (2010) and Michelle Obama's First Lady's Young African Women Leaders Forum (2011).

There is no telling what will become of the YALI Fellows. But if the YALI Fellowship ends up producing just a handful of Obamas, Maathais and the calibre of African intellectuals,

industrialists and civil society leaders that came out of the 'Kennedy Airlift', its impact on Africa's development prospects in the 21st century could be considerable. At any rate, the Initiative is shining a much needed light, in a constructive and proactive way, on the African leadership deficit: political, economic, scientific, judicial, corporate, administrative, etc.

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The administration is trying to plant the necessary vital seeds for structural transformation and sustainable development. It can and must do more if its African economic diplomacy is to succeed not only in delivering its Africa specific objectives but also as an instrument for US centric globally transformative foreign policy. If successful, any of the three initiatives could have far reaching impacts on Africa's development and its relationship not just with the US but also with Europe, China, India and a whole host of emerging economies.

For that to happen however, each of the three initiatives must be scaled up considerably: in terms of scope, resources, strategic partnerships and presidential level attention. As he ponders his legacy in an increasingly turbulent world, President Obama would do well to remember this. There is one place on earth where both fate and sound policy still beckons for greatness. No American President ever came to office with more political capital in Africa than Barack Obama. No American President ever ruled at a more hopeful time for Africa.

Just over a decade ago, then British Prime Minister Tony Blair stood at a Labour Party Conference and described Africa as a 'scar on the

world's conscience'. When he launched his 'Marshall Plan for Africa', (anchored in the New Partnership for Africa's Development (NEPAD) and characterized by a focus on increased trade, foreign direct investment, good governance and ending civil conflicts) all but incurable optimists, could have imagined that barely a decade later, the defining narrative in Africa would be that of Africa rising.

This is not to credit Tony Blair with Africa's shifting economic fortunes over the last decade. He had his share of mistakes in Africa. Nonetheless, the UK labour governments of Tony Blair and Gordon Brown haven't received as much credit as they deserve for their commitment to accelerating economic development in Africa and for their many development initiatives on the continent: from Tony Blair's Commission for Africa to the UK's support in the founding of NEPAD, to rallying international support for Africa's development causes at G8 and other global summits.

For better or for worse, the UK labour governments of Tony Blair and Gordon Brown not only helped shed light on the African development challenge (making it harder for others within the continent and elsewhere to turn a blind eye to the urgency of some of these challenges) but more importantly, they best anticipated and articulated the case for a more serious and sophisticated UK, US, EU, Japanese and Chinese African foreign policies, long before EU-Africa, US-Africa, China-Africa and Japan-Africa summits became a stable of global diplomacy. Everyone would benefit from - and had a role in creating - a strong and prosperous Africa.

The Blair/Brown governments went ahead to put forward a coherent package of measures to achieve this goal - measures that had such bipartisan appeal that the Coalition government of Prime Minister David Cameron has largely kept them intact in spite of the worst recession in British history since the 1930s. Blair made clear that his guest to save Africa was as much about western self-interest as altruism. He saw deepening poverty and disillusionment in Africa as fertile breeding grounds for terrorism in the post 911 world.

In spite of the boldness and soundness of his African development initiatives, Barack Obama is yet to make a coherent, administrations' transcending case for a US Africa foreign policy arounded

in 'win-win' outcomes. As the Blair/ Brown/Cameron examples show indeed as the Clinton/Bush/Obama administrations' examples show with respect to AGOA and the US PEP FAR Initiative, this is vital,



The Power, Feed the Future and YALI initiatives are innovative and potentially transformative win-win initiatives in US-Africa relations. Their success however, will require more than their inherent soundness or boldness. It will require serious and sustained effort from President Obama himself; US partners and allies, African leaders, the private sector, the intelligentsia, the civil society and ultimately the activism, dedication, ambition and effort of the African and American peoples. Above all else, it will require the harnessing of applications of science, technology and innovation to solve Africa's Energy, Food Security and Leadership challenges.

The US has a competitive edge in a number of technologies whose applications have the potential to fundamentally transform African economies whilst also yielding significant returns to the US. Applications of biotechnologies, nuclear technologies, space technologies, materials sciences, and information and communication technologies (ICTs) could have wide reaching impacts on some of Africa's long running development challenges: agricultural productivity, food and nutrition security; water and sanitation; energy access; disaster risk preparedness and resilience; climate change adaptation and mitigation; financial access, et cetera.

Applications of ICTs (the mobile telephone and the internet) have already revolutionized the African economy in ways that no one thought possible just a decade ago: enhancing access to financial services, agricultural market information, public health, governance (i.e. e-government) and disaster risk preparedness. The World Bank estimates that ICTs directly contribute about 7 per cent of Africa's GDP. This is higher than the global average because mobile telephony in particular, has been creatively deployed to substitute for many other services and/ or to correct for long running 'market' and 'government' failures in sectors such as access to credit and infor-

Applications of biotechnologies, nuclear and space technologies to Africa's agricultural, water, energy, health and environmental challenges could have similarly positive impacts. One of the little noticed developments in Africa in recent years has been concerted efforts by African countries, individually and collectively, to develop capacities to harness applications of nuclear and space sciences and technologies for socio-economic de-

A number of African countries, including Kenya, Nigeria, South Africa, Senegal and Ethiopia have either developed or are in the process of developing potentially credible space, nuclear and biotechnology science and technology programmes. The US Space Agency (NASA) would both be revitalized and regenerated by a new focus on applications of these technologies and innovations to Africa's development challenges.

A dynamic US-Africa trade, development, investment and science and technology agenda for the 21st century must be based on the relative competencies and needs of both regions. Nothing offers a better opportunity for this than a cooperative agreement anchored in, and driven by, harnessing applications of science, technology and innovation for socio-economic development and environmental conservation in Africa.

In spite of this, save for South Africa and Egypt, the US has virtually no science and technology cooperation agreement with African countries. The US could take a number of steps to fundamentally restructure its relationship with Africa in order to create 'win-win' outcomes.

First, the US needs to initiate science and technology cooperation agreements with African countries - either bilaterally or regionally. Second, the US should mainstream science. technology and innovation into its aid. trade and foreign policies towards Africa. The US African foreign policy should not be anchored in parochial economic and military aid, but in long term and strategic aid for the development of science, technology and innovation capacity in Africa.

Third, the US should embark on aggressive science diplomacy in Africa. It could establish the position of Science Attaches or Envoys in all its embassies and missions in Africa. The Science Attaché's job would be to explore and facilitate opportunities for collaboration (between public and private sectors, state, industry and universities) in harnessing applications of science, technology and innovation for development. Since 2009, the Obama administration has been running a much lighter programme of this nature - the Science Envoy Programme - mostly focused on intensifying cooperation in science, technology and innovation between the US and Muslim countries.

The US should consider extending this programme to all sub Saharan African countries. Fourth, the US could encourage African governments to send Science Envoys or attaches to African Embassies and Missions in the US to perform the same function as US Science Envoys in African

A truly 'equal partnership' between Africa and the US in the 21st century must be based on the source of Africa's long term productivity gains: science, technology and innovation. President Obama would do well to articulate a coherent case for this, to initiate the necessary measures needed to achieve this framework and to establish the legislative and policy framework that would ensure that the sustainability of this objective beyond his administration.

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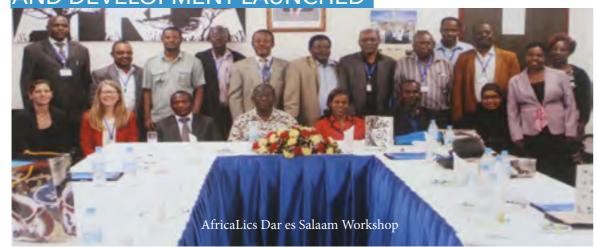






### **CAPACITY BUILDING**

NEW MSc MODULE IN INNOVATION AND DEVELOPMENT LAUNCHED



CTS Science and Technology Policy Institute (STPI) work managing the AfricaLics Secretariat has resulted in the development of a model Masters level module on Innovation and Development for incorporation into existing Masters programmes in AfricaLics' partner universities: University of Dar es Salaam in Tanzania, Makerere University in Uganda, Moi University and the Pan African University Institute for Basic Sciences, Technology and Innovation located at Jomo Kenyatta University of Agriculture and Technology located in Kenya. This is an open access model available for anyone to download and tailor to their Master programme needs. A

residential version of the module at the African Science and Technology Policy Institute (STPI) is currently being explored.

The module takes into account the needs and demands of the private sector and government ministries across the region. The module seeks to strengthen the capacity of African universities to conduct research and teaching on harnessing applications of science, technology and innovation policy for sustainable development in Africa. The model module is available for download here: http://www.africalics.org/model-masters-



#### NATIONAL TRAINING WORKSHOP ON MAINSTREAMING CLIMATE CHANGE INTO POLICY MAKING IN KENYA

CTS in partnership with the Pan African Climate Justice Alliance (PACJA), Act Change Transform, and the Ministry of Environment, Water and Natural Resources organized the national consultative and training workshop on mainstreaming climate change into policies and programmes in Kenya at Milele Hotel on 31st March - 1st April 2014. The workshop was attended by 200 participants from the county governments, civil society, media and private sector in Kenya.

Ms. Fatuma Mohamed, the Acting Director of the Climate Change Secretariat at the Ministry of Environment. Water and Natural Resources, assured participants that the national government is committed to strengthening partnership with all stakeholders on issues of climate change and environmental protection in the country:

• The Constitution of Kenya,

2010 has elevated issues of environment and development as human rights, which effectively lays a firm foundation for climate change work. The Constitution requires that all existing policies, laws and other instruments should be aligned to it. This provides for an opportunity for policy and legal reforms that will integrate climate change into the national development agenda.

- Climate Change has been integrated into the Second Medium-Term Plan (MTP-II) of the Kenya' Vision 2030, which seeks to transform Kenya into a: "newly industrializing, middle income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment".
- Nevertheless, there are numerous uncoordinated adaptation & mitigation programmes, projects and activities imple-

mented by different stakeholders, hence the need for 'mainstreaming' and coordination.

Kenya has progressed in meeting its international obligations by launching the National Climate Response Strategy (NCCRS) and the National Climate Change Action Plan (NCCAP 2013-2017).

The NCCAP Stakeholders (Ministry of Environment, GOK, 2010)

NCCAP Subcomponents (Ministry of Environment, GOK, 2010)

#### **Key Recommendations of the** NCCAP:

- Kenva to formulate stand-alone coherent Climate Change Poli-
- Kenya to formulate Climate Change Law
- Facilitate miscellaneous amendments
- Institutional reforms

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he Water Dialogue is a multi stakeholder platform, bringing together water practitioners, project managers, entrepreneurs, researchers and capacity builders to exchange knowledge and learn from each other. Water players recognize that water resources management and development is a long-term process which requires coordination and cooperation. The Water Dialogue Series seeks to promote national dialogue on sustainable water management for socio-economic development and environmental protection.

Structurally, the Water Dialogue involves a series of short multistakeholder dialogues and knowledge sharing grounded in evidence either generated through research or implementation. The main tool for promoting knowledge exchange is monthly forums held every second Tuesday. The forums are supported by various stakeholders on a voluntary basis. Some of the past themes covered include:

 Tapping Ground Water Resources in Northern Kenya-Knowledge, Vulnerability and Opportunities, 7th October,2013, supported by UN-**ESCO** 

- Challenges and Lessons from Water Sector Reforms and Devolution, 11th Nov. 2013, Supported by WASPA The Role of Professional As-
- Development, 10th Dec.2013 supported by Water Cap Official Launch of the Water Dialogue - 14thFebruary,

sociation in Sustainable Water

2014, Supported by BfZ, Wa-

- ter Cap, IEWM, NEMA, Governance and Integrity in Water Sanitation and Hygiene-11th March, Supported by Institute of Water and Environment Management(IEWM) in collaboration with the Kenya Water and Sanitation
- Water Innovations and Entrepreneurship' - 8th April 2014 supported by Kenya CIC

Network(KEWASNET)

The current partners include: UN-ESCO, UNDP, NEMA, Museums of Kenya, Water Cap, SWAP BfZgmbh, IEWM, KCIC and ACTS. ACTS in partnership with Egerton University co-hosted the 7th edition of the water dialogue

on 26th June at the Strathmore Business School. The theme was water innovations and entrepreneurship research from Kenya'. The dialogue acknowledged that low attention has been given to water resource management and innovations. There is need to review existing policies and regulations, and to provide incentives for new technologies and innovations, with specific reference to catchment management, adaptation to climate change and upgrading of existing public systems and wastewater re-use.

7th edition of the water dialogue at Strathmore Business School Next Water Dialogue Sessions

- August, Water Bill 2014 by Kenya Climate Innovation Centre (KCIC)
- Sept, GIS borehole & water point mapping by Water Cap
- October, Infrastructure for water, food and energy nexus by SWAP - BFZ
- November, Managing Drought & Floods by UNESCO
- December, Water Education - links between academia & industry by UNESCO

#### **ACTS LAUNCHES A QUARTERLY SEMINAR** SERIES ON INNOVATION AND DEVELOPMENT IN **AFRICA**



ACTS has launched a Quarterly Seminar Series on Innovation and Development in Africa. This quarterly seminar series promotes evidence based dialogue on the relationship between innovation policy and sustainable development.

Each Seminar is 90 minutes long and is typically held in the late afternoon. The Seminar Series is open to members of the public. The series is made possible through funding from Sida as part of the AfricaLics project.

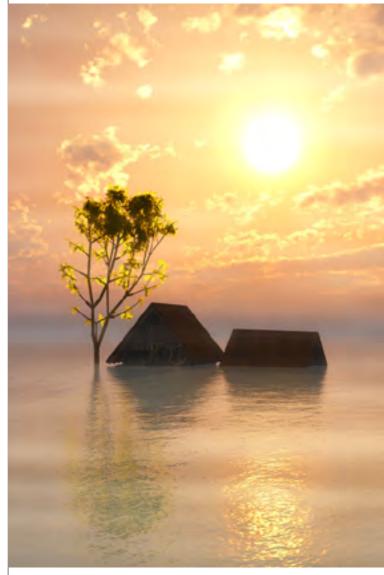
The first Seminar took place in April 2014. Dr. Kevit Desai, Chairman of LIWA (Linking Industry with Academia) Kenya Trust was the Guest Speaker. His talk on "Productivity and Innovation through Linking Industry and Academia" highlighted the growing opportunities and business models for university-industry cooperation in Kenya.

Overall, it was felt that the degree of private sectoruniversity collaboration in the generation, development and uptake of innovations in Kenya is still significantly low, although interest is growing.

The next seminar will take place in November 2014 and will be webcast live.

For more information on AfricaLics please visit the AfricaLics website or email us at secretariat@africalics.

### THE 8TH CONFERENCE **ON COMMUNITY-BASED ADAPTATION TO CLIMATE** CHANGE, 24TH-30TH **APRIL**, 2014



Community-based adaptation (CBA) recognizes that environmental knowledge, vulnerability and resilience to climate impacts are embedded in societies and cultures. Therefore, the focus needs to be on empowering and supporting communities to take action based on their own decision-making processes.

Since the inception of the annual CBA conference eight years ago, ACTS has consistently participated and shared its research outputs on climate change adaptation in Africa. For more information on CBA8 click here http:// www.iied.org/cba8-8th-conference-community-based-adaptation-climate-change.

#### **ACTS WELCOMES 6 NEW RESEARCH FELLOWS**



**Dr Haile Michael Teshome Demissie** 

Senior Research Fellow, Inclusive Bio economy

Dr Haile Michael Teshome Demissie has joined ACTS as a Senior Research Fellow, Inclusive Bio economy.

Dr Haile Michael Teshome Demissie obtained his PhD from King's College London and his LLM with distinction from the University of Warwick, UK. Before coming to ACTS, he was a postdoctoral research fellow at Tshwane University of Technology in Pretoria, South Africa.

Dr Demissie's background is in law. He uses different disciplinary approaches in probing issues of economic development. His main research interest is on the opportunities afforded by emerging technologies and on harnessing the power of these technologies to tackle the pervasive and persistent challenges of poverty and inequality. Dr Demissie's research has highlighted the need for a new global policy on enhanced benefit-sharing to ensure the equitable distribution of the benefits of mature as well as emerging technologies. The disruptive power and the likely global impact of emerging technologies such as biotechnologies, nanotechnologies, ICTs and robotics makes the case for interrogating the efficacy of current global public policy and practice on the governance of emerging technologies.

Dr. Demissie has published on the 'beneficent regulation' of nanotechnology, on the phenomenon of the 'nano-divide' and Africa's fate in the event of a fully-fledged 'nano-divide' global development. He has recently co-edited a book: Unite or Perish? Africa Fifty Years after the Founding of the OAU. The article he co-authored, 'Re-inventing the GM Debate in Ethiopia', has been published in the journal Science, Technology and Society.

Prior to his postgraduate studies, Dr Demissie served as an appeals judge at City Court of the Addis Ababa City Government, as legal advisor at the Office of the Mayor of Addis Ababa, as a part-time lecturer at Unity College (now University), and as judge at Addis Ababa High Court.



**Dr. Raymond Mugwanya** 

Senior Research Fellow, Information economy Programme.

Dr. Raymond Mugwanya has joined ACTS as a Senior Research Fellow, Information Economy Programme.

Dr. Mugwanya is a seasoned professional in user experience design, usability analysis, usability evaluation and educational technology. He seeks to change lives and livelihoods by developing technology solutions that offer dramatic improvements over existing ones. Dr. Mugwanya received his Ph.D. in Computer Science from the University of Cape Town under the supervision of Prof. Gary Marsden (UCT) and Prof. John Traxler (University of Wolverhampton, UK). He also holds a MSc. In Computing from Liverpool and a Bachelor of Statistics degree from Makerere University.

Dr. Mugwanya has held the positions of Deputy Chair and Chair of the Department of Information Technology at Makerere University. He has mentored over 100 undergraduate and graduate students and has also been involved in policy advancement and quality assurance at Makerere University. Dr. Mugwanya is an enthusiastic Arsenal fan and occasionally plays seven-a-side soccer in his free time. Raymond's research interests include among others – Educational technology, Interaction design, Usability Evaluation and ICT4D. He is married with two children.



Dr. George Ruchathi Mwaniki

Senior Research Fellow under the Climate Resilient Economies

Dr. George Ruchathi Mwaniki has joined ACTS as a Senior Research Fellow, Climate Resilient Economies.

Prior to this position, Dr Mwaniki was the director for programmes at the National Environment Trust Fund (NETFUND), where he was responsible for planning, designing and coordinating the implementation of sustainable environmental management projects including community based sustainable land management. Dr Mwaniki was also engaged by the Kenya Investment Authority as a lead consultant in the development of the Green Investment Guidelines for Kenya (GIGK).

Dr. Mwaniki holds a Doctorate degree in Environmental Science from Washington State University, a Master's degree in Environmental Engineering from Montana Tech of the University of Montana and a BSc in Environmental and Bio systems engineering from the University of Nairobi.

Dr. Mwaniki has over 10 years' experience in environment management, specializing in various areas including air quality, green economy, environmental policy, sustainable development, and alternative energy. He has previously worked in various institutions: The Institute of Nuclear Sciences and Technology, University of Nairobi; US Environmental Protection Agency (EPA) and Washington State University.

Dr. Mwaniki has participated in several regional and international environmental research projects including: Atmospheric Brown Clouds Africa (ABC Africa) on Mount Kenya; high altitude climate monitoring at the Ruwenzori Mountains in Uganda; aerosol flux measurements in Xi'an China; greenhouse gases flux measurements in Xi'an China; Community Atmosphere- Biosphere Interactions Experiment in Michigan United States; and the Treasure Valley PM2.5 precursor study in Boise Idaho, United States. Dr. Mwaniki has published several peer reviewed articles in top international journals. He is married with one child.



Dr. Joel R.A. Houdet

Senior Research Fellow (Responsible Natural Resources Economies)

Dr. Joel R.A. Houdet has joined ACTS as a Senior Research Fellow, Responsible Natural Resource Economies and ACTS Country Representative, South Africa.

He is an expert on natural capital accounting, ecosystem valuation and sustainability reporting and is involved in several high profile initiatives, including the drafting of the Natural Capital Protocol and several work streams of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). Joël holds a PhD in Management Sciences from AgroParisTech (France), a Masters in Practicing Accounting from Monash University (Australia) and Bachelor of Sciences from Rhodes University (South Africa).

He also has 5 years' experience in the think tank industry in Paris. He worked for OREE / CREED - Veolia Environment as a research engineer and advisor to CAC40 companies, SMEs and public organisations on biodiversity and ecosystem services issues. He was also the President cofounder of Synergiz from 2006 to January 2013, a Parisbased think tank which works on urban ecosystems and the business and biodiversity nexus.

In his spare time, Dr. Houdet enjoys eco-tourism, sci-fi novels and Reunion Island's dishes!

THE AFRICAN TECHNOPOLITAN



**Ms. Winnie Khaemba** 

Research Fellow, Climate Resilient Economies/Gender Youth and Inclusive Development

joined ACTS as a Research conferences on climate Fellow, Climate Resilient Economies/Gender Youth and Inclusive Development Winnie has also worked effective 1st September 2014. Winnie is an environmental enthusiast. Her areas of interest include: sustainable development, climate change, natural resource management and environmental law and policy.

Winnie has been actively involved in environmental, sustainable development and climate change work since 2006 and has participated at various forums both locally and internationally. She has worked closely with youth, grass root communities, and other interest groups to foster environmental and climate change awareness, and to promote sustainable devel- Winnie holds a master's opment.

climate change movement (AYICC) where she served in various capacities and led a number of projects including environmental education, trainings, seminars of Nairobi).

Ms. Winnie Khaemba has as well as national youth change.

> with 350.org in grassroots movement building and mobilization as the East & West African Liaison and Coordinator. In 2011, she was one of the coordinators of the Youth Climate Justice caravan, a part of the 'We Have Faith' Campaign aimed at mobilizing and creating awareness on climate change ahead of global climate talks in Durban. She currently serves as an advisor to the Executive Board of the African Youth Initiative on Climate Change (AYICC) and is a Member of the Global Green Grants' Next Generation Climate Board (NGCB).

degree in Law and Environmental Science (University These include the youth of Nottingham), a Bachelor's degree in Environmental Studies (Kenyatta University) and is currently working towards an MSc Climate Change (University



**NATASHA L. FROSINA** 

Research Fellow, Information Economy and Strategic Partnerships Coordinator

Prior to joining ACTS, Ms. Frosina worked for myAgro, a social enterprise based in Bamako, Mali. While working for myAgro in Mali, Natasha successfully piloted a micro loan programme and managed the professionalization of over 200+ myAgro vendors throughout rural Mali.

Ms. Frosina also served as Communications Advisor for Spark MicroGrants, where she oversaw the development of the organization's new website and captured project impact stories. She also served as a Monitoring and Evaluation Associate with Spark MicroGrants in Rwanda, where she helped design and implement an impact evaluation study.

Mr. Frosina holds an MSc in African Studies from the University of Oxford. She also holds a B.A. in International Affairs from the George Washington University, where she graduated Phi Beta Kappa and Summa Cum Laude.

he African Centre for Technology Studies (ACTS) in collaboration with Research for Poverty Alleviation (REPOA) Tanzania, and the Open University (UK) recently concluded a research project on "Industrial Productivity, Health Sector Performance and Policy Synergies for Inclusive Growth in Tanzania and Kenya".

SAVE THE DATE:

HIGH LEVEL POLICY ROUND TABLE.

**IMPROVING HEALTH SECTOR** 

MANUFACTURING INDUSTRY?

IS THERE A FUTURE FOR THE LOCAL

Nairobi, 17TH SEPTEMBER, 2014

PERFORMANCE IN KENYA AND TANZANIA:

The study identified policy options and incentives for enhancing the supply of essential pharmaceutical and medical products in order to strengthen national health system performance in the two countries.

ACTS, REPOA, the Open University and the Pharmaceutical Society of Kenya (PSK) will be convening a High Level Policy Round- Chair, ACTS Governing table on the 17th of Sep- Council (former, Director of on twitter @ACTS

tember 2014 in Nairobi to Medical Services, Kenya) explore these findings and the opportunities they present for improving health Dr Watu Wamae, ACTS performance and economic productivity in Eastern Africa. The Policy Dialogue will bring together key stakeholders in the national health systems in the region including government agencies and departments; the medical and academic community; the pharmaceutical supply chain; and the broader private sector in Kenya.

Key Speakers and Panelists at the Conference include: Mr. James Macharia, Cabinet Secretary, Ministry of Health, Republic of Kenya Dr. Paul Mwaniki, President, Pharmaceutical Society of Kenya (PSK),

Prof. G.B.A. Okello, Vice- We shall be tweeting the

Dr. Cosmas Ochieng, Executive Director, ACTS Prof. Sam Wangwe, Executive Director, REPOA Dr. Wilberforce Wanyanga, Executive Director, PharmaQ

Mr Walter Okok, Chair, Kenya Health Federation (KHF)

Key industry associations represented include: Federation of Kenya Pharmaceutical Manufacturers Kenya Pharmaceutical Distributors Association Hospital Pharmacists Association of Kenya Kenya Association of Pharmaceutical Industries Kenya Pharmaceutical Association

event live. Please follow us

# **ACTS TO CONVENE A WORKING SESSION** AT THE WTO PUBLIC **FORUM ON AFRICA'S** TRADE AND DEVELOPMENT **FUTURE POST 2015**

The African Centre for Technology Studies (ACTS) will be convening a day long 'Working Session' at the WTO in Geneva on 2nd October 2014 to explore the potential trade, financial and development impacts of post 2015 Africa's global and regional trade architecture under five sets of scenarios: (a) EU-Africa trade relations under EPAs and alternatives to EPAs; (b) Africa-US trade relations under different permutations of post 2015 AGOA trade agreement/s; (c) the multilateral Doha development Round; (d) Africa-China trade relations and (e) intra-African FTAs.

he ACTS convened Working Session will seek to shed light on the following questions:

- What are the implications for Africa's trade, development and financial needs if at the end of 2014/2015, the bulk of or much of EU-Africa or US-Africa trade relations reverts back to either the EU Generalized System of Preferences (GSP) for developing countries or the US GSP for Africa?
- What are the potential alternatives to EPAs and the post AGOA US-Africa trade agreements?
- What is the trade, development and financial potential of increased intra African trade?

- Under what, if any conditions, might this be a feasible alternative to the EPAs?
- What is the trade, development and financial potential of the Doha development round for Af-

The Panelists for the ACTS convened WTO Working Session on the Future of Trade and Development in Africa include:

- Dr. John Mutunga, Chief Executive, Kenya National Farmers Federation (KENAFF)
- Ms. Jane Ngige, Executive Director, Kenya Flower Council (KFC)
- Dan Machemba, Executive Director, Tanzania Chamber of Commerce, Industry and Agri-

- culture (TCCIA)
- Michael Galabuzi, Secretary Uganda General, National Chamber of Commerce and Industry (UNCCI)
- Agayo Ogambi, Kenya National Chamber of Commerce and Industry (KNCCI)
- Prof. Mwangi Kimenye, Brookings Institution, Africa Growth Initiative
- Prof. Francis Matambalva, Nordic Africa Institute
- Dr. Erja Askola, Trade Affairs, European Commission, DG International Trade
- Dr. Cosmas Milton Obote Ochiena, Executive Director, ACTS.



enya was nominated at the conclusion of the last CBA conference in Nepal to host the 9th Conference in Nairobi from the 23rd to 30th April 2015. The Government of Kenva is the official host with the African Centre for Technology Studies (ACTS) being the co-host and Secretariat for the Conference. Co-Organizers of the 9th Conference so far include: United Nations Environment Programme (UNEP), United Nations Development Programme- Small Grant Programme (UNDP-SGP), National Environment Management Authority (NEMA)-Kenya, CARE International, World Agro-forestry Centre (ICRAF), National Drought Management Authority (NDMA)-Kenya, Ministry of Planning and Devolution (Kenya), National Environment Trust Fund (NETFUND), Council of Governors (CG)-Kenya, International Institute for Environment and Development (IIED)-UK, Bangladesh Centre for Advance Studies (BCAS)-Bangladesh, Transparency International (TI)-Kenya, Kenya Private Sector Alliance (KEPSA), Climate Innovation Centre (CIC)-Kenya, Pan African Climate Justice Alliance (PACJA) and the Kenya Environment and Science Journalists Association (KENSJA).

The proposed theme for the CBA9 conference is "Measuring Effectiveness and Enhancing of Community Based Adaptation". The conference will examine and explore ways of enhancing the effectiveness of CBA approach to adaptation to climate change. To what extent has the approached contributed to influencing the climate change agenda at global, national and local levels? Mainstreaming climate change in national development policies? Mobilizing financing for community based climate or ecosystem based adaptation projects? In what ways could it enhance effective implementation of climate adaptation initiatives at national and local lev-

The discussion on effectiveness is considered timely as financial resources for adaptation are likely to grow in the coming years. The need to ensure that climate finances and other efforts are directed where they are most needed and in ways that yield the greatest possible impact on climate, livelihood and ecosystem adaptation and resilience is therefore of paramount importance. The CBA9 comes at an opportune time for Kenya and the global climate change and development agenda.

The outcomes of the conference will make significant contributions to the global climate change and sustainable development agenda (most notably UNFCCC COP 21 in Paris and post 2015 SDGs implementation) as well as national climate change initiatives, with specific reference to climate legislation and policy implementation in Kenya. The CBA9 also falls in the year that marks the transition from the Millennium Development Goals (MDGs) to the post 2015 sustainable development agenda. The Global Adaptation Network is also expected to be launched in Nairobi around the same time.

The CBA9 Conference will thus provide an opportunity for Kenya, other developing countries, UN agencies, the private sector, academia, civil society, media and local communities to share and showcase their approaches to climate change and the post 2015 sustainable development goals. The 9th CBA Conference shall identify and show case studies of community based adaptation initiatives from Africa, Asia, Arab and Latin America that exemplify les-

sons learned about the opportunities and challenges posed by the CBA approach. The Conference shall draw about four hundred delegates from around the world. representing various stakeholder groups including governments, UN agencies, the private sector, academia, civil society, media, and local communities.

The Conference shall run for six and half days and shall be organized as follows:

Three-day site visit to pre-identified community based adaptation projects on 24th, 25th & 26th April, 2014 in Kenya. The delegates shall be divided into groups of 20, and each group shall visit one region hosting community based adaptation projects in Kenya. The purpose of the site visits is to enable delegates to see first- hand the opportunities and challenges embedded in the CBA approach to climate change and to share their knowledge and experiences. Delegates will arrive on 23th April and all groups will depart from the Conference venue for the field on the Morning of 24th April and return to Nairobi on 26th April. The three days will be spent in the field and delegates will be accommodated in hotels near the project sites on the night of 24th and 25th April.

Three and half days of conventional conference proceedings on 27th, 28th, 29th and half day of 30th April Nairobi. This shall be divided into:

- Plenary Sessions: The Plenary Sessions shall be open to all delegates and shall address 'big picture' issues on the theme of the conference
- Parallel Sessions: The Parallel Sessions shall each address a specific aspect of the broader
- Poster Sessions and documen-

taries: Sessions will be organized for presentation of posters and other documentaries to ensure as many participants as possible gets the opportunity to present.

- High Level Climate Change Policy Round Tables: The Policy Round Tables shall bring together policy makers and key experts to explore different aspects of the CBA and Climate Change Agenda. In addition to having a session for policy makers during the main conference, policy round tables will be organized in the period leading to the main event to allow policy makers tease out key issues for Kenya and the region as far adaptation is concerned. In particular, four sets of High Level Policy Roundtables are planned:
- African Climate Change Parliamentary Policy Roundtable: bringing together key parliamentary representatives from the continent charged with climate change legislation, financing and policy oversight to strengthen their capacities and to provide them with a forum to share their experiences and to learn from each other and other stakeholders.
- African Climate Change Negotiators Policy Roundtable: to bring together African climate change negotiators, leading climate sci-

entists, policy makers and other stakeholders to dialogue on African needs, interests and negotiating tactics at global climate change processes with particular reference to COP 21 and the critical role that community and ecosystem based adaptation should play in any climate agreements.

- Kenya Private Sector Climate Change Policy Roundtable: to bring together the private sector and other stakeholders to explore effective ways through which the private sector can contribute to climate change adaptation in Kenya.
- Kenya Youth Climate Change Roundtable: Experience from previous CBA conferences has shown that many young people including students, recent graduates and young researchers are interested in participating in the CBA conferences but often lack resources to do so. Additionally, the fact that the conference is international means that only a small number can be accommodated within the main programme. It is against this background that the National Organizing Committee (NOC) is proposing to host a parallel event for the Youth during the conference to allow for greater participation of the youth in the CBA conference and activities as well as intergen-

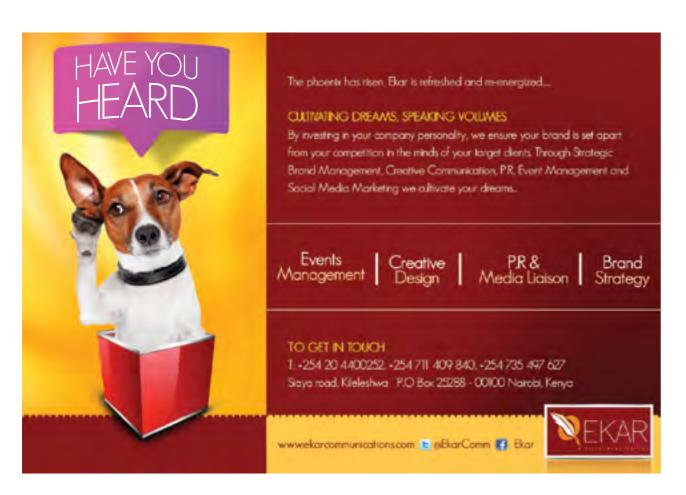
erational learning and knowledge sharing on climate change.

The National Organizing Committee (NOC) also proposes to publish (a) proceedings of the various High Level Policy Round Tables and (b) CBA Conference Proceedings through the ACTS Press either as an edited book or as a series of 'Working Papers' on Community Based Adaptation to Climate Change.

Proposed Sessions at the 9th CBA Conference:

- **CBA** and Climate Financing
- CBA and Governance
- CBA and UNFCCC Conference of Parties
- CBA and Livelihoods Resilience
- CBA and Ecosystem Resilience
- CBA and Agriculture and Food
- CBA and Sustainable Energy Solutions
- **CBA** and Water Security
- CBA and Science, Technology and Innovation
- CBA and Market Linkage/Con-
- CBA and Vulnerable Groups
- CBA and Green Economy

For more information on how to participate in the CBA Conference, Please email us at: info@acts-net.org



# **A SNAPSHOT OF ACTS ALUMNI:**

# WHERE ARE THEY NOW?



Chandaria

Hon. Justice Prof. Jackton B.

Ojwang

Manu

Formerly, Member of the Governing Council, African Centre for Technology Studies (ACTS), now Chairman of the Comcraft Group of Companies



Formerly, Dean of the ACTS College of scholars and member of the executive committee of the ACTS Governing Council, now Supreme Court Judge, Kenya.



**Prof. Calestous Juma** 

Founding Executive Director African Centre for Technology Studies (ACTS), now professor of the Practice of International Development and Director of the Science, Technology and Globalization Project at Kennedy School of Government, Harvard University.



Prof. Judi W. Wakhungu

Formerly, Executive Director, African Centre for Technology Studies (ACTS), now Cabinet Secretary, Ministry of Water, Environment and Natural Resources, Kenya.



**Prof. John Mugabe** 

Formerly, Executive Director African Centre for Technology Studies (ACTS), now Professor at the graduate school of Technology Management and Research Associate at the Institute for Technology Innovation (ITI), University of Pretoria. He is also a science and innovation policy consultant for the World Bank Institute and an associate of the Next Einstein Initiative (NEI) of the African Institute for Mathematical Sciences (AIMS) in Cape Town.



**Prof. Goran Hyden** 





**Dr. Godber Tumushabe** 

Formerly, Research Fellow at African Centre for Technology (ACTS), founding Executive Director ACODE (Advocates Coalition for Development and Environment) Uganda, currently at Stanford Law School.



Prof. Patricia Kameri-Mbote

Formerly, Director of Research ACTS, now, Dean, Faculty of Law, University of Nairobi.



**Boaz Blakie Keizire** 

Formerly, Research Fellow at ACTS, now, Head, the Comprehensive Africa Agriculture Development Program (CAADP), the African Union Commission in Addis Ababa, Ethiopia



**Dr. Evans Kituyi** 

Formerly, Senior Research Fellow, ACTS, now Senior Program Specialist, Collaborative Adaptation Research Initiative in Africa and Asia, IDRC.



Victor Orindi

Formerly, Research Fellow, ACTS, now, Climate Change Advisor, National Drought Management Authority (NDMA) Kenya.

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University of Nairobi

World Agroforestry Centre (ICRAF)

Third World Academy of Sciences (TWAS) Jomo Kenyatta University of Agriculture and

Technology

Kenyatta University

Masinde Muliro University

Strathmore University

Climate Innovation Centre, Kenya

NORAD: Norwegian Agency for Development

Cooperation

SIDA: **Swedish International Development** 

Cooperation Agency

DFID: **UK** Department for International

Development

ESRC, EPSRC: UK Research Councils

DANIDA: Danish International Development

IDRC: International Development Research

IIED: International Institute for Environment and

Development

FAO: Food and Agriculture Organization of

the United Nations

INASP: International Network for the

**Availability of Scientific Publications** TERI: The Energy and Resources Institute of India

PACJA: Pan African Climate Justice Association

NACOSTI: National Council for Science.

Technology and Innovation (Kenya)

BCAS: **Bangladesh Centre for Advanced Studies** 

ELCI: Environmental Liaison Centre International





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