



TECHNOPOLICY AFRICA

This is the official newsletter of the African Technology Policy Studies Network (ATPS)



How Can Science and Technology Policy be Formulated and Implemented in Africa?

ATPS Wins Climate Information Prize 2016

Innovation in Sporting: Kenyan Pilot Leads a Major Gaming Company in Africa

ATPS Vision:

To become the leading international centre of excellence and reference in science, technology and innovation systems research, training and capacity building, communication and sensitization, knowledge brokerage, policy advocacy and outreach in Africa.

ATPS Mission:

To improve the quality of science, technology and innovation systems research and policy making in Africa by strengthening capacity for science and technology knowledge generation, communication and dissemination, use and mastery for sustainable development in Africa.

Overall Objective:

To develop Africa's STI capacity (knowledge basis & infrastructure, knowledge circulation & networks, knowledge conditions & policies) today for sustainable African development tomorrow.

ATPS Motto:

Building Africa's capabilities in science, technology and innovation policy research, policymaking and policy implementation for sustainable development.

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CHAIRMAN'S MESSAGE

Across many nations today, there are urgent calls for deeper investments in Science, Technology, Engineering and Mathematics (STEM) as a pathway to build, maintain and secure a sustainable future especially in the developing economies. It is encouraging to note that some countries in Africa are already embracing this call with huge investments and commitments to STI and STEM; examples of such countries include Kenya, Rwanda, Nigeria, South Africa and Ethiopia.

ATPS continues to support African countries and governments, especially the private sector actors to engage in partnerships to leapfrog development in this sector. As a transdisciplinary network of researchers, policymakers, private sector actors and the civil society that promotes the generation, dissemination and mastery of STI for Africa's development, environmental sustainability and global inclusion, we ensure that all our interventions translate into tangible outcomes inform of policies, products and services.

We always ensure to align our programs with the donor priorities without losing focus on our core mandate and the priorities of our stakeholders at the local, national, and regional levels. This is in regard of the current global financial crisis where funding has significantly limited our ability to meet the needs of our numerous stakeholders in Africa. We therefore continue to solicit for financial support from our consortium of donors, partners and we remain open to collaborations and partnerships with like-minded organizations and institutions around the world.

As we progressively implement our phase VII strategic plan (2013-2018), we strive to ensure that our strategic activities are successfully heeded to and fulfilled. This plan was comprehensively guided by our core mandate of building Africa's STI capabilities, and the conditions for the co-production of scientific knowledge, technologies, innovations and areas of policies for sustainable development. The plan also focuses on five thematic priorities namely: STI policy Research and Research Capacity Building (STI-RCB), Intra-Africa and Global Collaboration and Partnership (IGCP) Program, Youth and Gender Empowerment (YGEP), Training and Sensitization (T&S) and STI Knowledge Brokerage, Commercialization and Policy Advocacy (KB-CPA). The Phase VII Strategic Plan ultimately aims at improving the functioning and understanding of STI policy research together with other policy making processes, and also in strengthening capabilities, systems, social responses and governance of STI – led sustainable development in Africa.



Prof. Shaukat Abdulrazak

Nevertheless, ATPS will in the coming months engage with its stakeholders' to review the current Strategic Plan with a view to assess the progress made so far with implementation and reposition it for better achievement of the ATPS mandate and objectives in line with stakeholders' and national priorities as well as the STISA 2024 and SDGs.

I take this opportunity to thank the current leadership at the ATPS for their doggedness and determination to uplift ATPS to higher statuses. The Board feels satisfied with this leadership and efforts which has seen ATPS move progressively towards attaining its core mandate for the last two years. I also greatly appreciate all those who have supported the ATPS in the last few years through development grants, linkages, partnerships and other collaborative activities namely: the JRS Biodiversity Conservation Foundation, Technical Centre for Agricultural and Rural Cooperation (CTA/Netherlands), Global alliance for Livestock Veterinary Medicines (GALVmed), Association of African Universities (AAU), the African Union Commission (AUC), the African Development Bank (AfDB), the African Capacity Building Foundation (ACBF), Pevans East Africa, and United States Department of Agriculture - Agricultural Research Service (USDA-ARS) amongst others. We welcome other partners and donors to support our work, we pledge to deliver on all expectations that will eventually lead to improvement in the lives of people in Africa and beyond.

**Prof. Shaukat Abdulrazak, PhD, FKIM, FAAS FASI, FTWAS, MBS
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Chair, ATPS Board of Directors**

EXECUTIVE DIRECTOR'S MESSAGE

Welcome to the fifth edition of Technopolicy Africa 2016. This edition highlights significant events, achievements and challenges of the ATPS during the quarter. In general, I am happy to inform that ATPS continues to soar higher in implementing its overall objective of promoting the generation, dissemination, mastery and use of science, technology and innovation (STI) for sustainable development in Africa. Some notable events, achievements and challenges are highlighted.

During the quarter, the *LandInfo* mobile app which is currently being promoted by the ATPS won the inaugural Climate Information Prize (Wazo Prize) in Kenya with a cash award of \$5,000 (Ksh.500, 000) offered to the ATPS. *LandInfo* app is a community-driven app that enables users to instantaneously access climatic and soil information and interpret them in the context of local conditions and values, including crop preferences for specific soils at point given locations. ATPS is currently seeking for support to out-scale the *LandInfo* technology to the rest of Africa with target to build the capacity of agricultural extension agents, farmers, pastoralists, and land use managers to use the technology to improve agricultural productivity, land-use planning and climate change resilience.

ATPS concluded a research project on "Documentation of the impacts of the African Climate Change Fellowship Program (ACCFP) on climate change adaptation and mitigation in Africa since inception in 2008". Results from this study show tremendous impacts being made in Africa by the ACCFP Fellows in areas of peer-reviewed publications; policy influence at local, national and regional levels; career progressions; innovative research and development activities, mentorship experiences, improved knowledge and skills on climate change issues, and expansion of Fellows' professional networks among many other impacts. The ACCFP was launched in 2008 under the auspices of the International Development Research Center (IDRC) to support African professionals, researchers, teachers and students to undertake experiential learning, education, research and training in order to increase their knowledge, capabilities and experience for advancing and applying knowledge for climate change adaptation in Africa. It is jointly administered by the International System for Analysis, Research and Training (START) Secretariat and the Institute for Resource Assessment (IRA) of the University of Dar es Salaam.

ATPS also entered into partnerships with like-minded Organizations in Africa during the reporting period. One of such partnerships was the signing of MOU with the African Agribusiness Incubation Network



Dr. Nicholas Ozor, ATPS Executive Director

(AAIN). Through this partnership, ATPS seeks to strengthen its reach and impact on agricultural development in alliance with the private sector actors on the continent. We have also published our works in various multimedia channels including journal articles, research papers, policy briefs, and newspapers. For instance the article "Review of policies, legislations and institutions for biodiversity information in sub-Saharan Africa" was published by ATPS in the *International Journal of Biodiversity and Conservation* Vol. 8(6), pp. 126-137 while the brief "Improving the relevance of university education to labour market demands in Africa" was published in the *ATPS Technopolicy Brief* No. 47.

We thank all our donors and partners and continue to solicit for their supports to enable ATPS improve the quality of STI policy research, policymaking and implementation in Africa by building the capabilities of individuals and institutions to achieve sustainable development on the continent. This administration pledges to continue to deliver on the value for every penny received for our work. This we have shown since the inception of our administration in mid-2014 through improved governance and administration, accountability, transparency and observance of the rule of law and the ATPS policies and procedures.

Dr. Nicholas Ozor
Executive Director, ATPS

HOW CAN SCIENCE AND TECHNOLOGY POLICY BE FORMULATED AND IMPLEMENTED IN AFRICA?



**By Professor Osita Ogbu,
Director, Institute of Development Studies (IDS), University of Nigeria and Former Executive
Director, ATPS**

It is no longer in doubt that science and technology is the engine for growth. There is a consensus here. There is an equally strong understanding that without appropriate science and technology policy to anchor and support the economic policies, the economic recovery and renaissance in Africa will be weak at best. Unfortunately, in spite of this understanding and consensus, science and technology policy does not command as much of our attention as it should. We have ministries of science and technology, national councils for science and technology and other science and technology policy agencies in Africa that are under-funded and ill-equipped to execute their mandates. Often, the mandates of these institutions and their relationship with other organs of government are not clearly defined and the national leadership fails to provide it with a rallying cause.

Science and technology policy by its very nature emanates from various ministries: education, health, agriculture, industry, water resources, and planning and national development. This sometimes gives the impression that a lot is being done and that a coordinated approach will be superfluous. But science and technology policy is too important to be incidental. It must be purposeful, coordinated and directed towards achieving stated sectoral or national goal. Therefore, the question remains: What is the best strategy for generating and implementing an enabling science and technology policy for economic development of any nation in Africa? Before we deal with this question let us examine the environment for economic policy formulation, since science and technology policy should be formulated in support of the overall economic and developmental goals.

What is the Ideal Science and Technology and Liberal Economic Environment?

In this era of economic liberalism and market fundamentalism, science and technology policy just like industrial policy, may be seen as an intrusion in the market. In the strict sense of market determinism, industrial development does not require the guiding hand of the government. Once the government has provided the enabling environment, industrial growth will follow. But this is farther from the truth. Not even the most developed industrialized nations have left the market to determine their industrial policy, but these governments took and continue to take active steps to engineer, promote and support the development of certain industrial products or sectors. This is done through support for certain types of research, through externalizing the product of military-industrial research, export guarantee, material and legislative support for innovation, and other economic measures including subsidies intended to promote certain products and sectors. For instance, a country may not have a specific science, technology or industrial policy towards the production of certain types of automobile but uses public resources to support research and development consortium in a particular university for the purpose of supporting the automobile industry. This is technology and industrial policy by other means.

In the era of privatization and economic liberalization, African countries must be careful not to allow these policies to negate the need for a well-thought out science and technology policy. It is critical that economic policies in all their ramifications are scrutinized for compatibility with a nation's given or identified technological trajectory. Growth, empowerment and wealth creation should not be promoted and then followed by blind privatization. Privatization should be undertaken under conditions that allow the upgrading of skills and learning, for increased domestic content in the intended production and for knowledge transfer. Joint ventures and foreign direct investment should not be promoted without examining these factors and without due consideration for technological capability building and the overall impact on poverty reduction. It therefore means that one has to privatize and sign joint venture agreements with a purposeful technological ideology in mind. This ideology does not leave things to chance, but provides the framework for enacting and implementing policies for technological capability acquisition in support of economic growth and development.

How then do we Establish this Trajectory and whose Role is it to Ensure Compatibility with Economic Policies?

Technology – led development is a leadership endeavour. This is true for a developing country much more than for a developed country. Leadership endeavour implies that the leader shows keen interest in using science and technology to advance economic development and takes personal interest in selected key sectors and activities where the country has either static or dynamic comparative advantage. The leadership role will include providing material support but more importantly, it will mean personal demonstration of interest from the President or his direct appointee that scientists' work is important. For instance, a visit by a serving President of a country to a research institute involved in biotechnology application in a specific crop e.g. maize is instructive. The President must remain interested, pay unannounced visits and ask for results. Nothing will motivate the researchers much more than this.

Does the Nature of Science and Technology Coordination in Institutions Matter?

What is the best strategy for generating the policies? Whose role is it to ensure compatibility with economic policies? The two questions are related. First, science and technology policy must fit into and must drive an overarching developmental goal(s). These goals may be expressed in countries' economic recovery/strategic plans. They can also be spectrally focused. What is important is that a science and technology plan must be elaborated to provide the engine for sustaining the process of achieving the stated economic and social goals. In essence, a science and technology policy should not be elaborated in a vacuum. Second, a science and technology policy should be elaborated within the framework of national systems of innovation that takes a holistic rather than a partial view of the economy, the interconnectedness of sectors, identifies the role of the different actors and seeks to fill the gaps in the system, to produce a superior result.

Let us look at two examples of industrial policy pronouncement, one real and another imagined. Mr. Olusegun Obasanjo, the former president of Nigeria banned the importation of furniture into Nigeria and I imagined that Mr. Mwai Kibaki, former President of Kenya would like Kenya to be the leading exporter of textile in Africa. As a science and technology policy expert, I would pose the following questions and seek answers to them:

- How do we produce cheap, high quality cotton/silk/wool in large quantities? Do we need biotechnology?
- Do we have the right technical competencies and skills, for example, in yarning, dyeing,



- machine, maintenance and repair?
- What is the status of our technological capability? Do we have the necessary equipment/ processing plants?
- If the skills/ technology is lacking, how do we acquire it? Technology transfers, Technology licensing, Hire technical expertise, Training: both local and abroad.
- Can we institute programs in our universities/ polytechnics to generate our own crop of textile engineers, technologist and designers?
- Do we need a research institute/ foundation dedicated to textiles, for example, "Textile Research Foundation"
- Do we need science/industrial parks and incubators? And how do we link the outcome of incubation to commercialization, for example, through export processing zones (EPZ)?
- How do we ensure that the whole system is linked and the actors understand their roles? How do we promote continuous learning within the system?

The questions cut across sectors and will involve different actors. But they are all very important questions. Within a purely "economist" paradigm, these questions would not be asked and without answers to these questions, the attainment of the stated goals will not only be delayed, it may never materialize. Even if it materializes, it will not be robust enough to stand the test of time. Make no mistake about it, the issues will not be resolved as a result of the market forces. It requires active government policy intervention. While production and innovation take place in the private sector, it is the role of the government to provide the support mechanism that ensures sustainability in the production process especially if new ideas and new processes are

involved. Consequently, there must be an institution, a sub-department for science and technology policy planning placed under perhaps the Ministry of National Planning. These science and technology policy experts would be the naturally of their economic policy counterparts with a wide mandate to provide science and technology policy inputs into national and sectoral policies. The National Science Councils can also play this role but the council has to be given greater recognition and brought into the mainstream of things.

From the foregoing, we learn that national leadership and stated national economic and social goals should catalyze a set of science and technology policies that create the foundation, the building blocks, for attaining these goals. The national system of innovation allows us to have a clearer picture of what is required and how to address these requirements. There is absolutely no magic in this business. Investments in the right education, technological capability, and purposeful and creative leadership are all necessary conditions for success. The discussion today on science and technology parks is extremely important. Technology parks form one of the building blocks in the system but we must ask fundamentally what the parks would be used for and to which overarching goal(s) are they related. It can only help us if we know what to encourage and what to discourage given Africa's meagre resources.

At the ATPS we keep all of these issues in view and provide the platform for debate, for innovative approaches to resolving science and technology issues. More importantly, we try to engage the government and other stakeholders to understand the importance of science and technology and the associated policies as the foundation for economic recovery, growth and development.

VALUE ADDITION GAPS: THE BANE TO AFRICAN ECONOMY



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In recent times, value addition has taken the centre stage in global, regional and national dialogues. Every farmer, producer and country is striving hard to add value to their product offering in a bid to increase its desirability among consumers. Value addition in simple terms is the process of changing or transforming a product from its original state to a more valuable state for example, the transformation of wheat into flour. The produce and-then-sell mentality of the commodity business is being replaced by the strategy of first determining what attributes consumers want in their food products and then creating or manufacturing products with those attributes.

Developed economies have taken value addition head-on and they are enjoying its dividends like expansion of markets, job creation, increased GDP, extension of marketing season, year around availability of produce among others. One of the leading states in value addition in the United States is Iowa. As a leading agricultural processing state, Iowa transforms millions of bushels of corn into value-added products such as corn oil, starches, sweeteners and animal feed ingredients. Much of their value added products is for export and Iowa's most widely known value-added product is ethanol, a corn based fuel blended into gasoline.

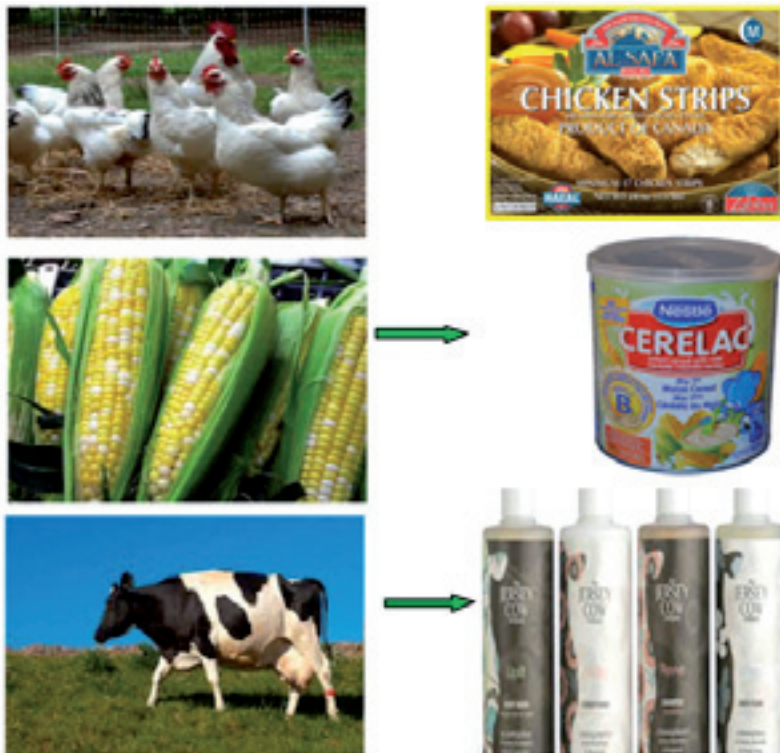
Other value-added products are made from corn such as hand cleaner, graffiti remover, candles, and plastic silverware. This ensures a zero waste policy where nothing goes to waste. Africa tells a different story without strong industries to create jobs and add value to raw materials; African countries risk remaining shackled by joblessness and poverty due to their persistence in the production and export of primary products. These primary products command fewer prices than their value added counterparts in the world market.

In West Africa, Côte d'Ivoire and Ghana produce 53 percent of the World's cocoa but the supermarket shelves in Abidjan and Accra, their respective capitals are stacked with chocolates imported from Switzerland and the UK. These developed countries do not farm cocoa. Nigeria the world's sixth-largest producer of crude oil, exports more than 80% of its oil but cannot refine enough for local consumption.

Nigeria has the potentials to produce enough tomatoes to take care of local consumption but due to lack of proper storage facilities and value addition, the country's markets are flooded with tomato paste imported from China. In Northern Africa, Libya just like Nigeria exports her oil with zero value added. In East Africa, Burundi who is a major producers

of coffee and tea, exports these products in their raw state with little or no value added; same goes for their milk production because their industrial potential has been untapped due to lack of technological capabilities. Tobacco, which is the major export commodity of Malawi, undergoes limited processing mainly destemming and the leaf exported to international tobacco companies who process them into final consumer products. On a general note, the list is endless.

These gaps in value addition among African countries have been attributed to many lacunas which include policy gaps, lack of infrastructures especially electricity and transport, corruption, lack of credit access and high tax (VAT), lack of necessary knowledge on value addition, poor market oriented production, high production and transaction cost and many more.



A graphical example of a Zero Waste Policy where nothing goes to waste.

In spite of all these problems some African countries have made headway in value addition. South Africa is at the front seat of value addition as far as the continent is concerned. In the automobile value chain, South Africa serves as an assembly hub for Africa and for right-hand steering. Some of the models produced in South Africa are also exported to the US market. They have a world-class mining industry. The mining services and equipment sectors have developed into important exporters in their own right. Indeed, South African suppliers are global leaders in numerous areas, particularly the provision of washing spirals, underground locomotives, submersible pumps, and hydropower equipment and mining fans. Kenya is also making headway in value addition especially in the agricultural sector. The new age farmers are finding innovative ways to add value to their produce. The banana farmers who engage in value addition produce products like banana biscuits, beer and crisps earning more than triple the raw product. They have also produced a new product called Portagurt

which is yoghurt made from blend of milk and sweet potatoes.

Value addition is trending and Africa cannot be left out. Necessary steps should be taken to put Africa in the limelight. African governments must create an enabling environment for value addition by formulating appropriate policies to encourage value addition, stating clearly-defined rules and regulations in the legal and tax domains, contract transparency, and improved incentive structures among others. Also necessary provision for needed infrastructures and openness to trade with other African countries should be made. Public private partnerships (PPPs) should be developed and encouraged to stimulate massive investments in infrastructure, which could have a multiplier effect on economic growth. The time is now for Africa to take its pride of place in value addition and compete favorably on the global market.

Dr. Ifeanyi Ndubuto Nwachukwu is a lecturer in the department of Agribusiness and Management of Michael Okpara University of Agriculture, Umudike, Nigeria. He holds a Ph.D in Agribusiness Management with research interest spanning agribusiness, Production Economics and Management and recently in climate change impact studies. He is a CIRCLE fellow (Climate Impact Research Capacity and Leadership Enhancement); CIRCLE is an initiative of DFID and implemented by Association of Commonwealth Universities (ACU) and African Academy of Sciences (AAS). He is widely published with over 50 peer – reviewed journal publications and about 5 titles in books/book chapters.



ATPS WINS THE COVETED CLIMATE INFORMATION PRIZE 2016



Dr. Nicholas Ozor, ATPS Executive Director receives the Climate Information Prize Award.

By Dr. Nicholas Ozor

ATPS emerged tops in the prestigious Climate Information Prize award 2016. ATPS received The Wazo Prize in an event held in April 2016 at the Safari Park Hotel. The Climate Information Prize (CIP) is funded by UKAid in partnership with the Kenya Meteorological Department. The awards were in form of cash prizes to entrepreneurs and innovators who are promoting new solutions with climate information to support vulnerable individuals, households and communities to build their resilience capacities on climate change impacts. ATPS was nominated amongst hundreds of other competitors working in Kenya.

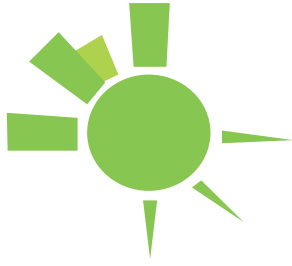
The award was in recognition of the LandInfo mobile app technology being currently promoted by the ATPS. *LandInfo* is a community-driven app that produces accurate soil and climatic information that empowers farmers, extension agents and land use planners in decision-making regarding agricultural

production, land-use management and climate resilience. The app is predicated on the lack of easily accessible, timely and accurate climatic and soil information to inform farm decision-making on production and management at site-specific locations. Besides, the failure of soil maps and other remote-sensing estimates to characterize soils at finer scales begs for suitable technologies that can produce better results. African farming system is characterized by inadequate extension agents to provide advisory services to farmers (1:2500 in Africa and 1:400 in Europe) and hence new technologies that could complement the services of the extension agents to farmers will go a long way in improving agricultural productivity. These are the reasons why *LandInfo* was developed.

Users are able to target investments on land for specific purposes such as specific crop choices for specific soils. With knowledge on annual average

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Climate Information Prize

rainfall and temperature, aridity index, soil types, and water retention capacity among others provided by the *LandInfo*, farmers are able to plan their farming enterprises adequately to avoid losses due to climate variability and hence improve productivity and resilience. Farmers are able to know which crops most optimally suits which soils for production under the prevailing climatic conditions using our crop-soil matrix; farmers are able to obtain the highest crop yields from any particular soil; land investors can use the app to map their soils based on soil potentials and needs; *LandInfo* improves targeting of investments on land for agriculture, ecosystem management, and infrastructural developments; and it is gender-friendly and inclusive among other benefits. Already, the reports from the pilot demonstrations and field adoptions of the *LandInfo* app generally show very positive responses from the users. About 82% of the users were very satisfied with the app, while 75% of the users agreed that the app had positive impacts on their productivity, land management and resilience based on the decisions it enabled them to take.

ATPS project, titled “Improving agricultural productivity and climate change resilience using the *LandInfo* mobile app technology” was applauded for its successes stories and impacts in Kenya. ATPS has been building the capacities of farmers and extension agents in Kenya to deploy the technology in their farm operations. Recently, the Agriculture, Fisheries and Food Authority (AFFA) of the Ministry of Agriculture, Livestock and Fisheries, Kenya awarded the ATPS a contract to train 100 of their Technical Agents in 10 Counties in Kenya on the use of the *LandInfo* mobile app. The training has already begun with a lot of interest and enthusiasm by the target trainees. Interestingly, many investors are also willing to deploy the app in mapping their land according to its potentials to support crop/pasture production.

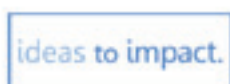


ATPS team with farmers and extension agents testing the soil in Kisumu using the LandInfo App.

The *LandInfo* mobile app is free-of-charge and can be downloaded from the Google play store on android phones with expansion plan to other phone platforms such as i-phones by December 2016. Farmers and extension agents are able to deepen their knowledge of biophysical characteristics of soils while users are able to access climatic and soil information and interpret them in the context of their local conditions and values including crop preferences. The app also enables users to target investments on land for specific purposes such as crop choices for specific soils. Through this innovation it is easy to monitor and access knowledge on annual average rainfall and temperature amongst other climate variables plus soil characteristics, hence enabling farmers to plan their farming enterprises adequately to avoid losses due to climate variability.

The ATPS continues to promote the deployment of the *LandInfo* app in decision-making to improve agricultural productivity, land-use planning and climate resilience. To this end, we solicit for supports from development partners and donors to enable us out-scale the technology to the rest of Africa. This technology will definitely contribute to the transformations we want in achieving agricultural productivity and resilience and by extension sustainable development in Africa.

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BIOGAS TAITA: IMPROVING ACCESS TO LOW CARBON ENERGY THROUGH BIOGAS AND SOLAR THERMAL WATER HEATING SYSTEMS



Participants in an Exhibition being shown how the Project “Biogas Taita” works.

Photo: Fieke Geerts

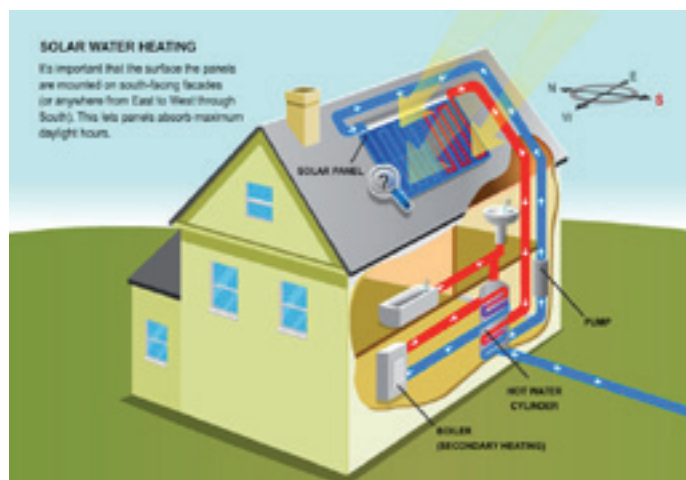
By Ms. Fieke Geerts
Project Development Manager
Taita/Taveta, Kenya

Biogas Taita is a community project that has been running successfully since 2011 and it is recognized by the Kenya National Domestic Biogas Programme (KENDBIP). The community project focuses on the introduction of domestic biogas as a sustainable solution to general problems people are facing in their everyday lives including environmental destruction (mainly deforestation), shortage of cooking fuels, smoke related diseases caused by indoor air pollution, poverty, poor food production, and drudgery on women and children.

The project has trained over 70 local craftsmen and has built over 350 biogas plants in Taita region. Although in the last two years, Biogas Taita Project shifted its focus more to projects at institutional level because of the vast firewood savings that can be made. The project has built model biogas latrines and is undergoing research on the acceptance, application and improvement of the technology and the implementation at markets, schools and restaurants. Biogas Taita Project is unique with its approach to applied technology as it stands out for

its focus on the so-called ‘software’ (people) using the ‘hardware’ (technology).

This has become especially important in providing more integrated community led solutions linking water and sanitation and waste management, where people are key to success implementation and optimizing the applied technology provided. Biogas Taita offers extensive capacity building training as an integral part of its services. We aim to integrate technology in a way that it becomes easy to use and maintain, and create skills and ownership for the community and people.

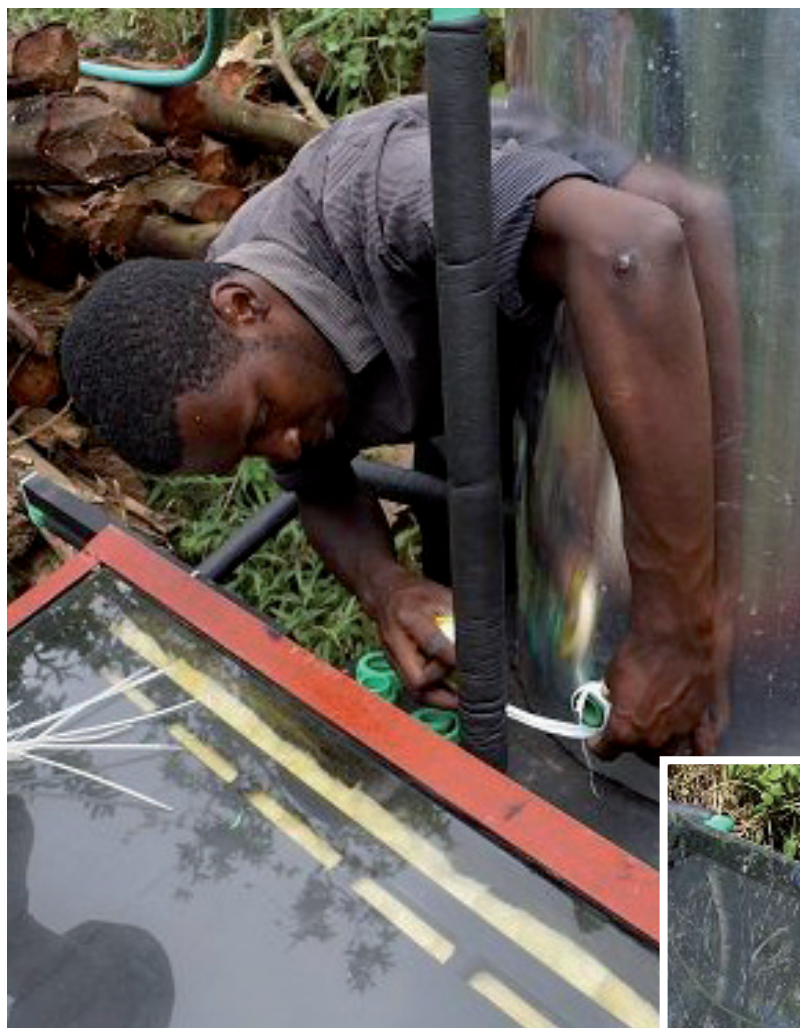


A typical example of a Solar Thermal Water Heating System.

Solar Thermal Water Heating Systems

The solar thermal water heating systems aims to reduce deforestation, improve livelihoods and well being, and create local employment as well. The solar water heating systems are affordable and easy to maintain, and as such more accessible for all Kenyan people. Not only domestically but also in institutions such as schools and hospitals, a lot of water is still being heated with firewood; this is no longer an appropriate option in the 21st century.

After two years of research and development, we have been able to develop a system, which is 100 per cent locally sourced and produced. It can substitute the currently available high-tech imported solar water heating systems and achieves the same outcome, with reduction in costs of up to 30% when compared with the imported technology.



A Water Heating System under construction.

water nor electricity or a pump but works only through the principle of thermo siphon. Thermo siphon is a method of passive heat exchange, based on natural convection, which circulates the water. The cold water for the system is either supplied manually on demand by using a bucket or automatically from a water reservoir tank or tap water connection. The standard system is based and sized on the most common behaviour and hot water demand of the standard family using a bucket shower but the installation can be adjusted in size and to the individual needs of the client.

The price includes a year sales guarantee and service contract. Furthermore, the system is much easier and cheaper to maintain, as it has no high-tech imported technology. With the introduction of this product we aim at stimulating the local economy and creating new green job opportunities in Kenya.

The solar thermal water heating system consists of two elements; the panel and the tank. In the panel the rays of the sun heat water running through copper pipes. From the panel the hot water goes into an insulated tank keeping the water hot for several days. The water is circulating and always reheated if there is sun until a maximum temperature of 60°C is reached. The system does not require pressure on the



The system can be installed on the ground or on the roof and can be connected to an overhead shower or to many user points. All materials used to produce the system are found locally. In the long run we will even try to change as many of the used materials as possible for environmentally more friendly and sustainable materials, e.g, the glass wool insulation could be substituted with locally grown cotton wool rejects or coconut shell fibre, though this needs further research and will be done in phase two of our product development.

We have designed the system in a way (very low tech) that makes it easy for Kenyan Jua-Kali (informal sector) craftsmen to learn and apply the required skills in its production. Installation and maintenance of the systems is even easier and any interested person can be trained in a short workshop on marketing, installation and maintenance and become a sales partner helping to spread the technology all over Kenya.



A demonstration of a Water Heating System through Solar Thermal Technology in Taita, Kenya.

Fieke Geerts has over 15 years experience in working in the field of sustainability and environmental solutions, with a focus on community capacity building, applied technology and community-led design and initiatives. She is an expert in identifying opportunities, integrated design, system thinking and new concept development, thereby bringing together community, technology and other relevant stakeholders. She has a passion for people and the environment, and aims to reduce our impact on the environment and increase well-being by improving affordability and accessibility to renewable energy solutions by African people, while at the same time creating local employment and empowering community members in taking responsibility and action.



ATPS OPENS THE 2016 GOLDEN CLMATE AWARD

By Dr. Nicholas Ozor and Arnold Onyango

African Technology Policy Studies Network (ATPS) was honoured to open the 2016 Golden Climate Award on 30th April 2016 during an event organized by the Light International Schools. Key invitees to the event were Dr. Belio Kipsang, the Principal Secretary from the Ministry of Education, Science and Technology; Mr. Pius Mutisia, Director Education Standards & Quality Assurance and Dr. Nicholas Ozor, ATPS Executive Director.

The Golden Climate International Environmental Project Olympiad (GCIEPO) Award is the biggest Science Project Competition in Africa for primary and secondary schools. The competition aims at promoting global understanding of environmental issues and the achievement of sustainability while providing challenges and opportunities to students' in order to instill them with skills and knowledge. It also highlights the top projects for Gold, Silver and Bronze and the Wangari Maathai Special Award from the 3rd edition of Golden Climate. The event empowers many students by creating awareness

of the urgent need to secure and save our environment for future generations.

Speaking during the official opening of the event, Dr. Nicholas Ozor, ATPS Executive Director thanked the management of the Light Academy for promoting the Global Climate Award in primary and secondary schools. He described the initiative as very innovative and timely in creating the required awareness and instilling discipline of environmental care to our young ones at a very early age. He emphasized on the importance of building climate change adaptation capacity in schools through the mainstreaming of climate change issues into the curriculum of primary and secondary schools. This according to Dr. Ozor will lead to a sustainable future for everyone. Dr. Ozor decried the activities of some individuals who engaged in unwholesome acts that exacerbate the impacts



Dr. Nicholas Ozor (Third left), ATPS Executive Director ready to cut the ribbon to mark the official opening of the Golden Climate Award 2016 at Light International School, Karen Nairobi.

of climate change in our environment including air pollution that emit greenhouse gasses, destruction of our forests and ecosystems, and burning of fossil fuels among others. He called on governments and the private sectors to work together in reducing actions that lead to increased carbon emissions on the continent and tread the path of low carbon development which is more sustainable.

The event was graced by participants from 27 countries across the globe who exhibited 151 projects all in the quest of a better and sustainable world.

GCIEPO continues to attract many participants from over 30 countries on its inauguration since 2011 and it has consistently enjoyed an average participation from a minimum of 20 countries each year. The academic event not only brings many people together but also offers an opportunity for local and

international students to engage in unique beneficial cooperative innovative learning in a bid to give them international experience in their own country. Foreign students learn from their African counterparts by sharing knowledge which is beneficial as they advance their studies.

The Light Academy is located in the serene leafy Karen suburb in Nairobi and it boasts of a quiet environment conducive to rich rewarding learning experiences. The school offers British National Curriculum from Cambridge Secondary 1 through to A- level (from Year 7 to Year 13) and it accommodates students from diverse geographical and cultural backgrounds; the school has brought up socially responsible and cultural sensitive individuals who are truly world class citizens.



Winners from different categories display their certificates and medals during the Golden Climate Award.

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SportPesa

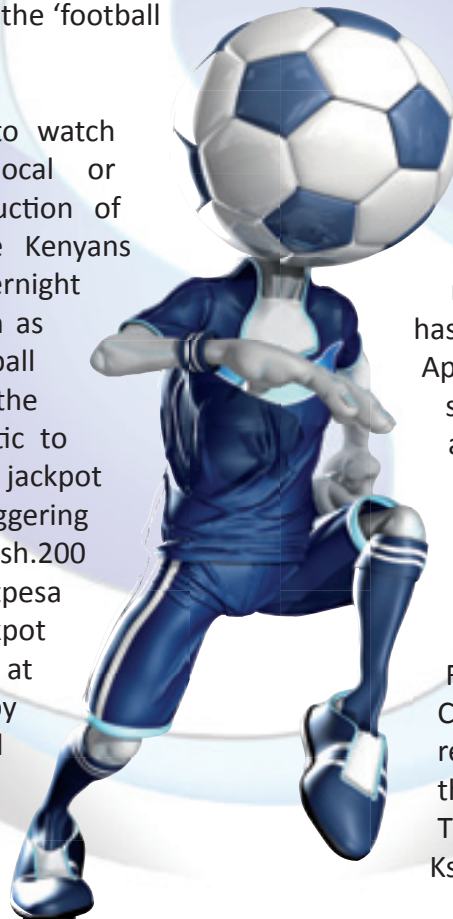
INNOVATION IN SPORTING: KENYAN PILOT LEADS A MAJOR GAMING COMPANY IN AFRICA

“Without football, my life is worth nothing,”
Christiano Ronaldo.”

By Dr. Nicholas Ozor and Sharon Anyango

Kenya is a “football crazed” nation with soccer being one of the most populous sports. Every weekend or weekdays when there is a major football match being played, you will see many fans flocked into stadiums dressed in jerseys of their respective teams, others prefer to follow matches in a pub while having drinks with friends. Only a few follow football matches from their homes. This best describes the ‘football craze’ of fans.

Today, it is more interesting to watch football matches whether local or international, with the introduction of Sport betting. Some fortunate Kenyans have turned out millionaires overnight after placing the right bets with as low as Ksh 100 on a specific football match. Elimah Khanaita 27 is the first woman football enthusiastic to be unveiled as the first female jackpot winner; she bagged home a staggering Ksh 22 million after spending Ksh.200 on two bets from Kenya’s Sportpesa Company. The largest jackpot Sportpesa winner so far stands at Ksh 29 million and it was won by George Mwangi, a Nairobi based businessman. Other winners include Nicholas Wafula and Isaac Kimongo who have won Ksh 5 million each.



Luck is what happens when preparation meets opportunity and not everyone is always lucky when it comes to betting. A student at Kabianga University Kenya, recently committed suicide by hanging himself after he allegedly lost all his tuition money to a Sportpesa bet. Moses Omwayo, another student at Maseno University was forced to drop out of school after he lost Ksh 40,000 in a football bet that was meant to be his fees.

A report by the Gambling Outlook: 2013-2017 by PWC indicates that Kenya, South Africa and Nigeria are the largest and fastest gaming markets in Africa. In South Africa it is the largest industry and main contributor to the South African economy with a gross revenue of \$1.7 billion in 2012 while in Nigeria the gambling industry is growing at a fast pace with a gross revenue at \$ 40 million in 2009. The revenue is generated mostly from sports betting with Nigerians spending more than \$11.3 million daily in bets. In Kenya gambling is liberal, both mobile and online gambling is permitted. It is estimated that about 23 companies have been licensed as operators of the new lucrative gaming business, which has an estimation of 2 million gamblers. Applications from many more are at various stages of consideration before approvals are granted from the Betting Control and Licensing Board (BCLB) under the Betting, Lotteries and Gaming Act, Cap 131 Laws of Kenya.

SportPesa, which was launched in February 2014, is the biggest gaming Company with the highest number of registered users, which amounts to more than 1.5 million subscribers to its service. The Company has handed out more than Ksh 70 million jackpot awards. Other

gaming Companies in Kenya include; Mcheza, Elitebet Kenya, Betin Kenya, Justbet Kenya, Betyetu, Betway Kenya, Eazi Bet, Lucky2u Bets, Betpawa Kenya, and Betika amongst others. The betting companies' in spite of reporting good growth still face a myriad of challenges, which include technological challenges, lack of regulatory and institutional framework, a lot of competition and unclear tax policy. Kenya does not have any tax policy for gambling; there are taxes ranging from licensing fees and income taxes but gambling services are excluded from VAT. Wins from gambling are untaxed though there is still implementation of The Finance Act 2015, which aims

to improve tax revenues from the gambling industry. According to the new law, the payments from bookmakers to non-resident players should not be subject to Kenyan tax but winnings of bookmakers should be taxed at 7.5% of the gross profits. The BCLB is trying to do its best to stop the Government from imposing tax on winnings of a bookmaker and to introduce a gaming levy on the gross revenue of Operators. Nevertheless, the Parliament is making efforts to ensure good practice in the Sport Gaming Industry by setting up of a Committee in July 2016 to look into the operations of the industry.

Interview with Captain Ronald Karuri

Captain Ronald Karuri, the CEO of SportPesa is reaping big because of his passion for sports and hard work. Many are astonished about how well the Pilot has run the gaming Company which is not his area of professionalization.



Captain Ronald Karuri, CEO SportPesa.

1. What is Sportpesa, your innovation and how does it work?

Sportpesa is the largest online and SMS based gaming company in Africa. It was launched in 2014 after duly being licensed by the Betting Control and Licensing Board of Kenya. The company offers sports fans an option to bet on a wide range of games ranging from football to rugby and several others.

Participants can place bets conveniently through our mobile or online platforms using the shortcode 79079 for those placing bets via SMS; or on the website www.sportpesa.com. The bets via the mobile phones were made easier recently when Sportpesa unveiled the Android App. It is very cheap to bet using our

platforms, SMS costs only KSh2 while all incoming texts are free. This explains why we are the market leader – the convenience, immediate payouts and friendly costs. Sportpesa also partners with all the major mobile money payment platforms to make sure that no one is inconvenienced while making transactions.

2. What is unique and innovative about Sportpesa?

Any Sportpesa user will assert that we have grown our relationships through integrity. Once the system picks that your predictions are correct, payment is instant. No hustle, no drama. The systems are very reliable and secure and in case of any problem, we have a 24-hour Customer Care Centre that is well manned and ready to serve clients in case of any problem. Also, because of the new mobile App and the easy-to-use online platform, sporting enthusiasts have the convenience to engage us anytime, anywhere before the start of a game.

3. What is the rationale for the emergence of Sportpesa at this time in the sporting industry?

In the era of social media, the world has become much smaller in terms of relationships with other people outside our immediate regions. For this reason, sports, which has always brought people together, is now even more uniting; given the media platforms available to engage with different audiences and fan bases. The desire to make that extra cash while enjoying oneself has never been as big as it is currently, especially as the middle income group grows bigger and the love and recognition of

various sporting events increases. Passion for sports, usually, also goes hand in hand with one's patriotism. You saw how much Kenyans were proud of the Rugby team when it won the HSBC Rugby Sevens Series, Singapore tournament. Which better way to reward and thank citizens for standing by their national teams than to win cash while at it?

4. Who are your clients?

Anyone who watches sports - whether out of passion or curiosity; and would love to make some money while at it. To ensure that we uphold the highest standards of responsible betting, one has to be over 18 years to place a bet.

5. How has Sportpesa innovation been received in Kenya and what is the rate your current popularity?

We are a fairly young company yet if you mention Sportpesa even in the rural areas, people will tell you who we are. That goes to show the kind of impact we have made in the society as a firm- creating jobs, uplifting standards of people in the community, supporting the promotion of local sports and as a recreation activity. Our brand is well known all over Kenya and you know building brands largely relies on trust and how useful you are to people's everyday lives. Due to the instant cash prizes and the ease of using our platforms, our popularity has soared and we are thankful to Kenyans for embracing us the way they did.

6. What are the potential benefits the innovation has for your clients?

We have uplifted the lives of many, through our Jackpot and daily winnings. Our clients nowadays have knowledge of interesting leagues in other countries which they were previously not aware of, thanks to our platform giving them access to over 200 leagues. They also get to support their favourite teams indirectly through us. We sponsor the SportPesa Premier League; the top tier league in Kenya, formerly known as Kenya Premier League, football clubs such as the AFC Leopards, Gor Mahia and Nakuru All Stars, which by the way have very passionate fans and support professionalism in the game, like we did with the recent training of coaches in partnership with the Arsenal Football club.

7. On a very good weekend, what is the amount of income you generate from Sportpesa enterprise? On the other hand, on a bad weekend, what do you make on the average?

Every weekend, obviously is different and Kenyans are very last-minute kind of people. So it is not easy to quantify because the patterns vary sharply from one weekend to another. Sports are dictated by moods and one day you have people feeling all good about a team or some games, the next day the audience shifts focus to politics and engagement is low. So it is a very erratic kind of process. However the customers are the biggest beneficiaries because hundreds of people get thousands in payouts daily.

8. What is your dream?

That one day, the local football league will grow to be so big, it will attract the attention of regional and global audiences. This is what as a company we strive for. Improve the game, support our sportsmen and women, impact the local communities and create jobs for our young people. Let us face it, offices cannot offer employment to everyone. Sportpesa creates alternative job creation means.

9. What are the critical challenges (current and anticipated) that could prevent you from realizing your dreams at Sportpesa?

You notice that since we started, several other sports betting companies have cropped up. Competition is good and we welcome it because it creates more value for Kenyans. However, it is my prayer that regulatory policies shall continue to focus on growth of the gaming industry and not try to stifle it. As betting companies increase, I hope that integrity shall also be upheld to make the market understand what responsible betting is all about. Betting is no mystery. It is almost just like hedging in the financial sector, you anticipate an outcome and depending on what you projected you can make money out of it or not. Nothing too mysterious as many may think.

10. What strategies have you put in place to overcome your challenges at Sportpesa?

We have set a daily limit of KSh20,000 for bets, meaning we want people to bet responsibly to avoid problems of addiction. Sportpesa is also a member of the Association of Gaming Operators in Kenya where aside from championing for better policies, we have peer review and self-regulation mechanisms modeled on the world's best practice. Our call center which operates round the clock ensures that we are always on hand to engage customers to ensure that we leave no gap for fraudsters to exploit our cherished clients. Sportpesa is also always seeking new innovations to make the online gaming experience more enjoyable and rewarding to stay ahead of competition.

Of course some of the plans we are working on I cannot divulge for obvious reasons: the competitors.

11. Has Sportpesa innovation received an award or recognition since its introduction in Kenya?

Yes. Sportpesa was feted in the Social Media Awards (SOMA) for the best use of social media in the corporate category, In the Discovery Sports Industry Awards (DSIA) in South Africa, we won in the Best African Sponsorship 2016 category for our sponsorship of the SportPesa Premier League in Kenya and under Marketing Society of Kenya we got honored for best marketing campaign and sports advertisement in 2015

12. As a recognized innovator, what advice would you give to other upcoming sports innovators and youth in Africa?

Building networks and workable solutions is important. It was not easy for us to grow to the market leader position. We are who we are today because of the support of our various partners from the media, sports-related companies and our clients. M-Pesa has been at the forefront of supporting Kenyan innovators and businesses and now it has become a household name and a service that is not only trailblazing but also creating solutions to everyday problems in a convenient manner. This is where youths can stand out in job creation. If you discover a problem or a gap somewhere, believe in yourself and seek a way to solve it to stand out. Confidence goes a long way.

13. What major contributions have you made back to the Kenyan society?

We sponsor the local football premier league, Super 8, Boxing, Rally and Entertainment for Fun with

Charity which is a Basketball tournament. Sportpesa has a major corporate social responsibility program where we participate in initiatives such as the Anti-jigger Campaign with Ahadi Kenya and Color Kwa Face that supports persons with albinism.

14. Where do you anticipate Sportpesa Kenya to be in the next 5 years? Do you plan to move beyond Kenyan borders to other neighboring East African countries and Africa as a whole?

Every company starts with an ultimate goal to grow within reasonable limits. We are targeting new markets outside Kenya but this is still a plan in its nascent stage and I cannot divulge details for now. In five years we also hope to be one of the biggest employers in the region both directly and indirectly through the various initiatives we run and those that we shall start along the way. One of our main goals is to create as many employment opportunities as we can through of course support of various noble initiatives or payouts to clients.

15. Tell us a little bit about yourself as the CEO, your background, achievements and aspirations?

I am also the Chairman of AGOK, a trained pilot with a passion for sports. I was once employed in the National Carrier and I am the immediate former Secretary General of The Kenya Airline Pilots Association where I tried my best to fight for the rights of pilots. It is my desire to help build a robust gaming industry whose ripple effects lead to a surge in new jobs in the country. I still enjoy flying planes from time to time because besides being my job at one point in my life, it is a hobby. Once a pilot always a pilot. Lastly, I am married and a father to 2 children.



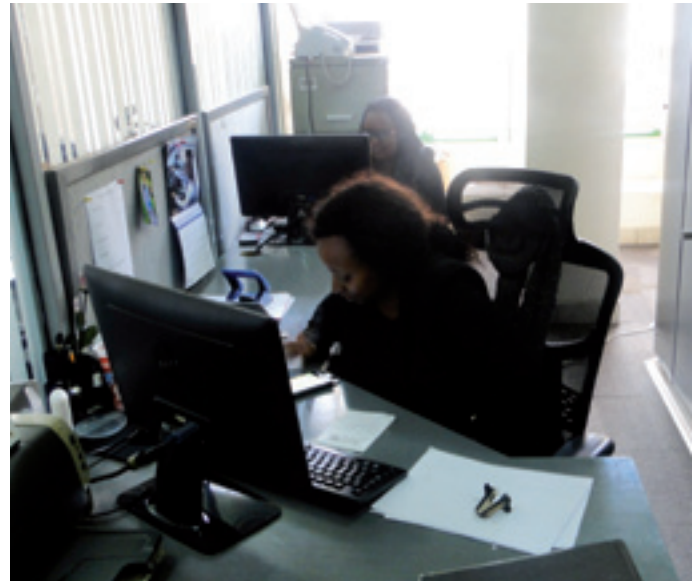
ATPS RELOCATES TO A NEW OFFICE

By Sharon Anyango

The African Technology Policy Studies Network (ATPS) has relocated to a new office in the same Chancery building located on Valley Road, Nairobi, Kenya. The new ATPS office is now located on the 8th floor. Previously, ATPS had its offices on the 3rd floor. The new office space provides an ample and better working environment and adequately accommodates the same capacity of staff and property as the previous one.

Dr. Nicholas Ozor, ATPS Executive Director used the opportunity to donate books including working papers, research papers, policy briefs, journals, conference proceedings, extension materials, newsletters and other text books published by the ATPS and its partners to universities in Kenya. Some of the universities that benefitted from this donation include; The University of Nairobi, The Technical University of Kenya; The Great Lakes University of Kisumu, and Egerton University Kenya, amongst others. Some individuals were also allowed to pick some books of interests to them. The intention of this book donation was to support the teaching and learning of science, technology and innovation among students, teachers and researchers in those universities. In his official response to the book donation, the Deputy Vice Chancellor, Research and Extension, Egerton University, Prof. John Gowland Mwangi noted that the books will improve teaching and learning in the university as it will enable students and staff to make reliable academic references in their research works.

ATPS is a trans-disciplinary network of researchers, policymakers, private sector actors and the civil society that promotes the generation, dissemination, use and mastery of Science, Technology and Innovation (STI) for Africa's development, environmental sustainability and global inclusion. ATPS implements its programs through National Chapters in 30 countries (27 in Africa and 3 in the Diaspora including USA, UK and Australia). These chapters provide administrative leadership in each of the countries while the Diaspora chapters provide platforms for Africans in Diaspora and friends of Africa to contribute meaningfully to sustainable development on the continent in what is termed brain gain and brain circulation.



ATPS staff at work in the new Office.

ATPS has been lauded by various stakeholders for its commendable performance as a leading policy research Think Tank in Africa. It emerged in 2015 as the best Think Tank in Africa for the second year in a row according to a global survey conducted by the University of Pennsylvania under the Think Tank and Civil Societies Program (see: http://www.atpsnet.org/media_centre/news/article.php?article=172). ATPS was rated in Africa as the Best Think Tank Network, Best managed Think Tank, Think Tanks with the most significant impact on public policy, Think Tank with the best use of the Internet, Best institutional Collaboration involving Two or more Think Tanks, and its policy report/brief on "Mainstreaming Gender in National Science, Technology and Innovation (STI) Policy of Kenya" was rated the best in Africa and 2nd globally.

ATPS is currently reviewing and implementing its Phase VII Strategic Plan (2013-2018) with six strategic priority areas identified by its stakeholders. These priority areas include; STI Policy Research and Research Capacity Building; Intra-Africa and Global Collaboration and Partnerships; Youth and Gender Empowerment; Training and Sensitization; STI Knowledge Brokerage, Commercialization and Policy Advocacy; and Other Cross Cutting Goals.

The ATPS Board of Directors and Management remain grateful to all its development partners and donors who have continually supported us to achieve our overall mandate of building Africa's capabilities in STI for sustainable development on the continent.



ATPS SIGNS MOU WITH AAIN TO ACCELERATE AFRICA'S QUEST TO ERADICATE POVERTY, HUNGER AND MALNUTRITION

By Arnold Onyango

The African Technology Policy Studies Network (ATPS) has signed a Memorandum of Understanding (MOU) with The African Agribusiness Incubator Network (AAIN) Ghana. Dr. Nicholas Ozor, ATPS Executive Director and Dr. Alex Ariho, Chief Executive Officer AAIN exchanged the MOU as a sign of agreement between the two parties with the overall purpose to accelerate Africa's quest to eradicate poverty, hunger and malnutrition and improve the general well-being of its people.

The signed MOU sets out the roles of both organizations in the achievement of the overall purpose of the MOU including to:

- Enhance cooperation on key thematic areas with focus on incubation processes.
- Promote capacity building and institutional development of through partnership, cooperation and exchange.
- Broker knowledge and dialogue on STI, economic policies and market development in Africa.
- Collaboration and implementation of research programs for Africa's development with focus on technology incubation, testing and commercialization.
- Institutional strengthening of Africa's regional organizations on incubation in the context of regional integration, trade and policy frameworks and processes.
- Provide knowledge and information management on agribusiness and agribusiness incubation.
- Provide policy backstopping, insights, analysis and implementation frameworks on technology and commercialization of research results.
- Training and building capacity on policy issues, entrepreneurship training, intellectual property rights, policy brief training, foresight studies, etc.
- Developing joint research proposals on areas of common interest and seek for

funding on transforming agriculture from public and private sources.

The MOU is categorized into several strategic areas which include; Agribusiness innovation incubation, start-up and commercialization of innovations; Research and knowledge management; Project development and implementation to enhance knowledge, information and best practice in Africa; Partnerships, international cooperation and resource mobilization; Policy advocacy and communication; Capacity development, graduate training, gender mainstreaming; Emerging developments; Food and nutrition security; and environmental issues facing Africa. Both parties will contribute to the implementation of mutually beneficial activities that include technology transfer through integrating Science, Technology and Innovation (STI), research capacity building, Agribusiness innovation incubation training and sensitization, stakeholder dialogue, (policy analysis and advocacy, and finally Start-up of SME programmes that can empower enhanced benefits of poverty eradication, hunger and malnutrition through science, technology and innovation for sustainable development in Africa.

AAIN incubates agribusiness-incubators through advancing entrepreneurial talent, networking, integrating science and technology for job and wealth creation in Africa. It also seeks to coordinate innovative business models for agribusiness financing and investment in a bid to enhance access to market for the network's agribusiness incubators while ATPS is a trans-disciplinary network of researchers, policymakers, private sector actors and the civil society that promotes the generation, dissemination, use and mastery of science, technology and innovations (STI) for African development, environmental sustainability and global inclusion. ATPS implements its programs through members and partners in National Chapters established in 30 countries (27 in Africa and 3 Diaspora Chapters in the Australia, United States of America, and United Kingdom).

ATPS RESEARCHER PARTICIPATES IN STEPS CENTRE SUMMER SCHOOL



Mr. Ernest Acheampong (Third Right Standing), with other participants at STEPS Centre Summer School UK.

By Mr. Ernest Nti Acheampong,

Mr. Ernest Acheampong, ATPS Researcher participated in the 2016 STEPS Centre Summer School from 16-27 May at the Institute of Development Studies (IDS), University of Sussex, UK. This is part of ATPS's strategy to retool its serving staff to be capable of delivering optimally in their tasks. Mr. Acheampong is also completing his PhD. in Public and Development Management from the Faculty of Economic and Management Sciences, Stellenbosch University, South Africa.

Rationale for the 2016 STEPS Centre Summer School:

The 2016 Summer School brought together highly motivated doctoral and post-doctoral researchers, working in fields around development studies, science and technology studies, innovation and policy studies, and across agricultural, health, water and energy issues to experience new knowledge, share ideas and learn new methods of doing research.

Essentially, the key question that informed the Summer School was "How can pathways to sustainability – that link technology and environmental integrity with social justice – be conceptualised and built in a complex and dynamic world? The Summer School

exposed participants to an array of cross-disciplinary concepts, analytical frameworks, empirical methods and policy strategies to unpack assumptions, the politics and to understand different pathways to sustainability. Participants also joined the wider team of STEPS researchers in lectures, seminars, interactive exercises and innovative 'workshop' events to enjoy the beautiful landscape of Sussex countryside.

The key emphasis of the summer school was on grounded theory, collaborative learning and participatory experiences. Themes covered during the teaching and discussion sessions included many interesting topics such as: the politics of sustainability, complexity in dynamic interacting systems, interdisciplinary in social and natural science, knowledge and power, understanding risk, uncertainty and ignorance, livelihoods, institutions and development, equity, social justice and pro-poor action research, global governance of science and technology, the political dynamics of regulation, innovation and social change, socio-technical transitions, civil society and social innovation, responsibility, accountability and enterprise, sustainability, security, resilience and transformation, 'opening up' expertise and consensus, participatory

tools and practices, science, policy and the media, technology access and delivery, strategies for communication and engagement among others.

The Summer School Outcomes

- The summer school was intellectually engaging, bringing different ideas together through interactions to locate a common ground. It was mind stimulating and an exciting period of reflections, questioning and sharing of new ideas.
- Inspired by the workshop and the beautiful landscape of Sussex countryside, participants were engaged in different conversations that enriched earlier discussions in the classroom as well as highlighted the STEPS Centre's pathway approach to sustainability.
- The summer school provided an array of methods and methodologies that were essential for critically examining the different pathways to sustainability. It offered participants the opportunity to relate their research to these methods and methodologies and to see how the STEPS Centre pathway approach can be applied to their respective research.
- Participants gained substantial learning experience and knowledge in particular on

how people, politics and power interact to shape the sustainability pathways.

- The summer school provided a unique platform for networking and future collaboration with participants and STEPS Centre staffs.
- The summer school opened up new ways of thinking and constructing realities around development issues and sustainability.

Lessons Learned and Implications for the ATPS

Despite being a very interactive event with many foreseeable opportunities, this summer school has provided me with great scientific methodological tools and hands on experience that would be beneficial for my research work at the ATPS.

“ How Can Pathways to Sustainability – that Link Technology and Environmental Integrity with Social Justice – be Conceptualised and Built in a Complex and Dynamic World? ”



Participants at STEPS Centre Summer School.



Mr. Ronald Ssenfuka displays his products during the YIA Competition Mini Exhibition.

USAID AWARDS TOP TEN YOUNG INNOVATORS IN AGRIBUSINESS



**YOUNG
INNOVATORS
IN AGRIBUSINESS**

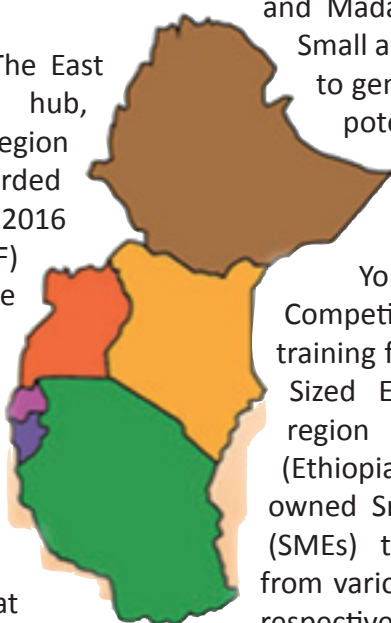
By Arnold Onyango

The USAID in partnership with The East Africa Trade and Investment hub, Syngenta and The Inter Region Economic Network (IREN) awarded top young innovators during the 2016 Agribusiness Innovation Trade Fair (AITF) which was held on 27th May. The trade fare held a competition dubbed, "Young Innovators in Agribusiness competition" (YIAC).

The Competition offered an opportunity for East Africa's youth-owned start-ups and Small and Medium Sized Enterprises (SMEs) to generate creative activities that can stimulate sustainable enterprises that attract potential investors and stakeholders.

The Young Innovators in Agribusiness competition draws experience from the Agribiz4Africa 2014, Ideas and Messaging Competition that attracted over 800 participants from 22 sub-Saharan Africa countries. The overall goal of the competition is usually to enable East Africa, Mauritius, Seychelles and Madagascar youth-owned start-ups and Small and Medium-sized Enterprises (SMEs) to generate creative ideas that can attract potential investors and stakeholders through competition.

Previously, the organisers of the Young Innovators in Agribusiness Competition would conduct a two day training for sixty (60) top Small and Medium-Sized Enterprises from the East African region and AGOA participating countries (Ethiopia), aged between 18- 35 years who owned Small and Medium-sized Enterprises (SMEs) that addressed the needs arising from various agricultural value chains in their respective countries



Despite the eligibility being tough, as the participants were to grant the East Africa Trade and Investment Hub, Syngenta and Inter Region Economic Network Young Innovators in Agribusiness Competition Committee all rights of lawful use of business profiles, hence empowering The Young Innovators in Agribusiness Competition Committee to publish the top 30 business profiles that advanced to the finals through social media such as website and finally allowing the Agribusiness and Innovators Trade Fair Directory specially set up for the project. All participants learned valuable business skills, how to pitch their companies to investors and competed for final spots at the AITF 2016 as the top 30 East African and Ethiopian youth-owned start-ups and SMEs aimed at competing for six awards of seed capital amounting to \$ 20,000.

The competition rolled out four key platforms which included; the training and mentorship hub, Investor consultative meetings, the business competitions and the Agribusiness Innovation and Trade fair platforms. The event also offered the young innovators a platform for their Start-ups and Small and Middle-Sized (SME) enterprises to generate viable agribusiness activities and business plans, to build capacity of the youth-owned startups and to pitch their business to investors and stakeholders.

AITF 2016 also featured Pitch for Funds or Partner Session (Dragons Den), Poster Sessions (Bus Station Pitching), financial services and Product Sourcing Stations, as well as discussions with potential mentor and grant giving organizations.



Mr. Abrahame Endrias (centre) the overall winner under SMES category.

Photo: Innovation Africa

SPONSORS



KENYA TO HOST INNOVATION AFRICA 2016



Participants at Innovation Africa Summit during a past event.

Photo: Innovation Africa website



Innovation Africa 2016

Africa's Official Ministerial Summit
Sept 20-22, Nairobi, Kenya



By Arnold Onyango

Kenya is set to host the Innovation Africa 2016. The spectacular Summit is expected to take off from 20-22 September in Nairobi, Kenya. This special summit on innovation science and technology will be one of the best Africa's Official Ministerial Summit which offers an outstanding choice of different options to companies, allowing them to select a partnership package that best suits their needs and meets their objectives.

During the event, participants will have a choice of booking meetings in advance with Ministers of Basic & Higher Education, ICT, Science & Technology together with special Government Agencies for Education, Universities and Technical Colleges. Benefits to be achieved from this summit include: a variety of options for exhibition, corporate presentations, chairing of a ministerial panel session and imaginative ways to showcase companies. Branding is also available throughout the venue on



Photo: Innovation Africa Website

banners and screens, the Innovation Africa website, The African Brains Newsletter which are all printed materials including the Summit Guide and Agenda. Special exclusive options are also available to sponsor the event mobile app and to host the ministerial reception or gala dinner.

Participating at the summit enables one to raise their company's profile and gain maximum exposure to the public. According to Mr. Dave Hill, Senior Director HP East Africa,

Innovation Africa provides HP with a unique experience to engage with true leaders and decision-makers on the continent.

Hon. Fred Matiang'i, Kenya's Cabinet Secretary of Education, Science & Technology has confirmed personal invitations by Hosting Africa's Leading Decision-Makers and Ministers from many African countries to be accompanied by senior delegations.

"I am delighted to be hosting Innovation Africa 2016 and will ensure the participation of all key actors from my ministry, the ministry of ICT, the Teachers Service Commission, the leading universities & technical colleges and at the same time making sure we work closely with AfricanBrains to maximize the participation of African countries and ministries of education, ICT and science & technology," said Mr. Matiangi

This year's summit will exceed previous attendance records as more than 40 countries and 90 ministerial representatives are expected to participate in the summit. Countries expected to participate in the summit are: Angola, Benin, Burkina Faso, Botswana, Burundi, Cameroon, and Cote D'ivoire, DRC, Ethiopia, Gabon, Gambia, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Republic of Congo, Rwanda, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.



OPPORTUNITIES

The African Union Research Grant, Call for Proposals

The African Union Commission is calling for proposals to support Africa's Science Technology and Innovation Strategy-2024 to address aspirations identified under Agenda 2063 and Priority 3 on human development of the EU-Africa partnership. The call supports research on Food & Nutrition Security and Sustainable Agriculture (FNSSA) with particular attention on sustainable intensification.

The application deadline has been extended to 31 August 2016

For more information please visit the AU website at: <http://au.int/aurg>

African Agribusiness Incubators Network (AAIN) Conference & Expo- 2016

The African Agribusiness Incubators Network is set to host the largest Agribusiness and Expo Conference at Accra International Conference Centre Ghana, from 4th-6th October. The theme for this year is turning science into business with focus on inclusive Agribusiness Incubation for vibrant economies in Africa. More than 448 delegates drawn from over 30 countries around the globe are expected to attend the conference, there will be 110 exhibitors both individual and organizations will have the opportunity to showcase their work. In addition, there will be awards to the best incubators and novel business ideas which will receive a tune of \$ 15,000.

For more information please visit: <http://africaain.org>

International Conference on African Development (TICAD VI)

Kenya will for the first time host the sixth Tokyo International Conference on African Development at the Kenyatta International Convention Center (KICC) from 27th -28th August 2016. The event is being held at an opportune moment as 2016 is the first year for implementation of the global and regional development agendas namely, the 2030 Agenda for Sustainable Development and Agenda 2063 and its First Ten Year Implementation Plan. The conference will address some of the thematic issues that Africa has been facing since the last TICAD V in Yokohama and also feature private sectors from Africa and Japan.

For more Information please visit: <https://ticad6.net>

KAS Media Africa (Undergraduate & Master's) Scholarships for Sub-Saharan African Journalists (Fully Funded to study in South Africa)

KAS Media Africa is offering a university scholarship to a promising, young (under 30) sub-Saharan African journalist to do a full-time Honours or Masters Degree at the University of Witwatersrand's Journalism Programme in Johannesburg in 2017. The scholarship includes:

- University fees
- Return flight to Johannesburg
- Monthly stipend of 5 000 ZAR
- Accommodation fees for student housing
- A one-time payment of 2 500 ZAR for study material

Application Deadline: August 31st 2016

For more Information please visit: <http://www.opportunitiesforafricans.com>

SCHOLARSHIPS

The Walter Sisulu Scholarship Fund

The Walter Sisulu Scholarship Fund addresses one of the most troubling features of the education system in South Africa – the poor quality of learning (especially in the areas of maths and science), which results in school-leavers being inadequately prepared to enter the world of work or higher education. The Walter Sisulu Scholarship Fund gives access to quality, relevant education to many impoverished students. Scholarships offered for degree programmes are, in most instances, linked to employment opportunities through the company providing the scholarship. Some of the disciplines in degree programmes for which scholarships are offered are Management, Engineering, Law, Medicine, Food Science, Mathematics and Science.

For more Information please contact:.

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For more Information Please visit: <http://www.imd.org/mba-admission-fees/#tab=3>

Masters Scholarships at University of Cape Town in South Africa, 2016

Applications are invited for Bertha Centre Scholarship to students pursuing MBA or MPhil in Inclusive Innovation and PhD programmes. The scholarship caters for candidates committed to advancing social justice and pioneering inclusive opportunities through social innovation and entrepreneurship. The Bertha Centre for Social Innovation and Entrepreneurship was established as a specialized unit at the UCT Graduate School of Business (GSB) in 2011, in partnership with Bertha Foundation, a family foundation that works with inspiring leaders who are catalysts for social and economic change. Through this partnership, the GSB strengthens its commitment to transformation and equality and UCT's strategic goal to address key development challenges facing Africa.

Eligibility: Applicants can apply

- If they are an African citizen (or a South African permanent resident for at least one year.)
- If they have:

(a) Started or are working with a social/green/entrepreneurial innovative idea that seeks social or economic change

(b) If they have worked on advancing social justice and pioneering inclusive opportunities through social innovation within an organization for at least one year

Application Deadline: 31 October 2016

For more Information please visit: <http://www.gsb.uct.ac.za/s.asp?p=179>

NEW APPOINTMENTS



Mr. Ragen Hillary joined ATPS as a Research Assistant on June 20th, 2016. He is a holder of a Bachelor of Science degree in population health from Kenyatta University and currently pursuing a post graduate diploma in project management from the Kenya Institute of Management. He has experiential exposure in resource management and implementation of projects in the community and within the health system infrastructure with a strong focus on Monitoring, Evaluation, Research and Learning (MERL). He is interested in development and humanitarian efforts with an impetus towards empowerment of populations and individuals to realize positive change in their lives and livelihoods.

Sharon Anyango joined the ATPS as a Communication and Outreach Assistant on June 27th 2016. She is a Journalism and Mass Communication graduate from the Technical University of Kenya. She is a young, vibrant and highly motivated individual with so much drive to achieve nothing but the best for both clients and the organization. She brings a wealth of experience from Startimes Kenya and Elective Africa where she served as a video editor and a Public Relations Officer respectively.



PHOTO GALLERY - Climate Information Prize 2016



Dr. Nicholas Ozor, ATPS Executive Director making his address to the audience.



***On the Dance Floor.** Dr. Nicholas Ozor (front) dancing with different participants during the CIP event.*



Visitors being welcomed at the venue of Climate Information Prize Award.



***Display in progress:** Different innovative products exhibited during the Climate Information Prize Award.*



An exhibitor displays his work.



Participants at the plenary hall.

PHOTO GALLERY - Golden Climate Award 2016



International Participants at the Golden Climate Award.



Participants display their products at the exhibition gallery.



Dr. Nicholas Ozor among key invited guests at the event.



Winners display their medals at the Golden Climate Award 2016.



Dr. Nicholas Ozor, ATPS Executive Director walks to address the audience in the podium.



Dr. Nicholas Ozor, ATPS Executive Director making his speech.

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