

10 nominees for Africa Innovation Prize

The African Innovation Foundation (AIF) this week announced the top 10 nominees for its landmark programme, the Innovation Prize for Africa (IPA), which celebrates its 5th year under the theme "Made in Africa".



The Innovation Prize for Africa is the premier innovation initiative in the African continent, offering a grand share prize of US\$150 000 and incentives to spur growth and prosperity in Africa through home-grown solutions.

“In the past five years, I’ve seen innovation grow from a mere buzzword to a sturdy path for African growth in multi-disciplinary industries across the continent. As Africans, we have the talent, potential and clout to solve our own problems with ingenuity too, and IPA is testimony of this,” said Pauline Mujawamariya Koelbl, IPA director at the helm of this initiative since its launch in 2011.

The IPA has seen tremendous growth in applications and increasing interest from both innovators and innovation enablers over the years. To date, the competition has attracted more than 6,000 innovators from 50 African countries, making it a truly Pan African initiative.

IPA 2016 attracted a record 3,600 plus innovators and received 985 successful submissions from 46 African countries. African ingenuity this year showcases new breakthroughs in malaria and other public health burdens, smart solutions for farmers and dynamic energy initiatives, including:

- Urine Test for Malaria (UMT) is a rapid non-blood diagnostic medical device that can diagnose malaria in less than 25 minutes.
- Api-Palu is an anti-malaria drug treatment developed out of natural plant extract.
- Exatype is a software solution that enables healthcare workers to determine HIV positive patients' responsiveness to ARV drug treatment.
- Aceso is an imaging technology, capable of performing full-field digital mammography and automated breast ultrasound at the same time.

[AIF](#) will host the IPA 2016: 'Made in Africa' awards ceremony and its first ever Innovation Ecosystems Connector 22-23 June 2016, in Gaborone, Botswana.

Collaborating partners include the Ministry of Infrastructure, Science and Technology (MIST), and the Botswana Innovation Hub (BIH).

Walter Fust, chairman of the AIF Board was impressed by the level of submissions for IPA 2016: "As we celebrate the five year IPA journey, our mission to engage, inspire and transform is evident in the IPA process – from the growing registrations, to the level of talent and ingenuity we see in the nominees, as well as the enthusiasm from our expert judges in seeing these innovations at work to solve some of Africa's intractable challenges."

Prior to the final announcement at a special gala ceremony on 23 June 2016 at the Gaborone International Conference Centre (GICC), the expert panel of [IPA judges](#) will once again deliberate through live pitching sessions and one-on-ones with each nominee to select the top three winners.

Listed below are the top 10 IPA 2016 individual nominees, with more details available on the dedicated [AIF website](#):

Design architecture and learning platforms

1. Dr Youssef Rashed, Egypt: The Plate Package (PLPAK). The Plate Package (PLPAK) is a robust software solution that assesses the architecture of building plans or technical drawings, determining structural integrity of the end design. PLPAK applies the boundary element based method to analyse and view practical design on building foundations and slabs. This enables engineers to represent building slabs over sophisticated foundation models easily, building information modelling techniques and eliminating human error. With the rapid growth of African cities, there is increased demand for infrastructural developments to support the growing population. The infrastructure system in Africa, especially building architecture, tends to go untested due to huge associated costs in verifying structure integrity, and can lead to the collapse of buildings with many deaths. PLPAK addresses this through its low-cost, easy to use but world class tool.

2. Godwin Benson, Nigeria: Tuteria. Tuteria is an innovative peer-to-peer learning online platform that allows people who want to learn any skill, whether formal or informal, to connect with anyone else in proximity who is offering that skill. For instance, a student needing math skills can connect online with someone in their vicinity offering remedial classes in mathematics. The tutors and the learners form an online community that connects them, and once a fit is established, they meet offline for practical exchange. Both tutors and learners are thoroughly vetted to ensure safety, accountability and a quality learning experience. Globally, conventional methods of education and learning are transitioning from centralized to distributed, and from standardised to personalised. Such trends have resulted in better learning outcomes. Tuteria fits in well with this model, and has been highly recommended by the IPA judges for the African continent.

Tackling malaria and other public health burdens

3. Dr Eddy Agbo, Nigeria: Urine Test for Malaria (UMT). Urine Test for Malaria (UMT) is a rapid non-blood diagnostic medical device that can diagnose malaria in less than 25 minutes. Africa has the highest number of malaria cases worldwide; more often than not, when fever is detected, anti-malaria medication is administered. However, the inability to quickly diagnose and commence malaria treatment can lead to various complications including kidney failure, build-up of lung fluid, aplastic anaemia and even death. UMT uses a dip-stick with accurate results in just 25 minutes. The technology detects malaria parasite proteins in the patient's urine with fever due to malaria. The UMT is simple and affordable, and a

potential game changer in managing malaria across Africa.

4. Valentin Agon, Benin: Api-Palu. Api-Palu is an anti-malaria drug treatment developed out of natural plant extract. It is significantly cheaper than available anti-malarial drugs, and has great inhibitory effects on 3D7 strains of *plasmodium falciparum* the causative agent of malaria. Sub-Saharan Africa is home to 88% of malaria cases and 90% of malaria deaths reported globally (WHO: 2015) with some African governments spending up to 40% of their public health budgets on malaria treatment. Api-Palu manifests as a fast rate of malaria parasite clearance from the blood following short term treatment, with relatively lower doses. It is available in tablets, capsules or syrup. The drug has been approved in Benin, Burkina Faso, Tchad, and Central Africa Republic because of its therapeutic and non-toxic effects.

5. Dr Imogen Wright, South Africa: Exatype. Exatype is a software solution that enables healthcare workers to determine HIV positive patients' responsiveness to ARV drug treatment. According to WHO, 71% of people living with HIV/AIDS reside in Africa. Until now, governments' response has been to ensure access to treatment for all. However, a growing number of people on ARVs are resistant to drug regimens, leading to failure of the therapy, exacerbating the continent's HIV/AIDS burden. Exatype processes the highly complex data produced by advanced "next-generation" DNA sequencing of the HIV DNA in a patient's blood. Through a simple report, it detects drugs that are resistant to the patient, then highlights the need to avoid these to ensure successful treatment. Exatype has the potential to contribute towards effectively managing HIV/AIDS in Africa, and also holds promise in helping detect drug resistance for other disease burdens such as Tuberculosis (TB) and malaria.

6. Dr Kit Vaughan, South Africa: Aceso. Aceso is an imaging technology, capable of performing full-field digital mammography and automated breast ultrasound at the same time, dramatically improving breast cancer detection. Annually, there are more than half a million cancer deaths in Africa and these numbers are expected to double in the next three decades. If diagnosed early enough, the cancer can be treated successfully. However, because 40% of women have dense tissue, their cancers cannot be seen on X-ray. Furthermore, a false negative finding can have devastating consequences. Aceso is a single device that can acquire dual-modality images – full-field digital mammography and automated breast ultrasound - at the same time. This world first system is protected by international patents and has been successfully tested in two separate clinical trials with 120 women.

Smart farming solutions

7. Olufemi Odeleye, Nigeria: The Tryctor. The Tryctor is a mini tractor modelled on the motorcycle. By attaching various farming implements, it can carry out similar operations as a conventional tractor to a smaller scale. Farming for most small scale farmers in the continent is tough, laborious and characterized by low productivity. Small scale farmers are constrained by the costs involved in switching to mechanized agriculture and use of heavy equipment. However, through inspired alterations to a motorcycle's engine, gearing system and chassis, this innovation has made it possible to mechanise agriculture in Africa for small scale farmers in a way that was previously inaccessible. Additionally, the Tryctor is easy to use and cheaper to maintain as 60% of its parts and components are locally sourced. The IPA judges were captivated by the clever adaptation of a motorised solution that is ubiquitous in Africa, largely for transportation to a solution for mechanized farming for small scale farmers.

8. Samuel Rigu, Kenya: Safi Sarvi Organics. Safi Sarvi Organics is a low-cost fertiliser made from purely organic products and waste from farm harvests, designed to improve yields for farmers by up to 30%. Rural farmers in sub-Saharan Africa pay huge costs for fertiliser, which is often produced abroad and imported. Owing to such high costs farmers can only afford the cheap, synthetic, and acidulated fertiliser varieties. In many areas where the soil is inherently acidic, use of acidulated fertilisers can lead to long-term soil degradation and yield loss, at about 4% per year. Safi Sarvi costs the same as traditional fertilisers, can reverse farmers' soil degradation and lead to improved yield and income. The product uses biochar-based fertiliser which can counteract soil acidity, retaining nutrients and moisture in the soil. Additionally, the carbon-rich fertiliser removes carbon from the atmosphere by at least 2.2 tons of carbon dioxide equivalent per acre of farm per year.

Dynamic energy initiatives

9. Andre Nel, South Africa: Green Tower. Green Tower is an off-grid water heating and air conditioning solution based on solar power that uses advanced thermos-dynamics to create up to 90% savings in electricity consumption. Water heating and air conditioning systems can account up to 60% of energy consumption in a home or building. There are a number of heating and cooling systems in the market, but few that have demonstrated consistency in efficiencies regardless of weather conditions. The Green Tower improves efficiency of a solar heat pump with solar thermal collectors, low pressure storage tanks and heat exchangers. With Africa's middle class rapidly growing and demand for energy outstripping supply, this initiative has the potential for large scale roll out. Green Tower can conserve limited energy resources, diverting them from heating and cooling systems to more productive industries.

10. Johan Theron, South Africa: PowerGuard. PowerGuard enables consumers to determine the maximum amount of power supply required for daily operations. Consumers can thus reduce their power demand, especially during peak times, leading to a more efficient power supply, and helping to reduce power cuts. PowerGuard addresses electricity fluctuations, and power delivery and supply challenges by reducing the peaks, relieving pressure on the electricity network. Consumers can set their own maximum peak power usage needs. This technology substantially reduces load shedding and power rationing, diverting power to more productive industries. Africa faces a high demand for grid power, but with limited resources and an aging infrastructure, the existence of a smart grid can help reduce the pressure on existing infrastructure while moving the continent slowly towards renewable energy.

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