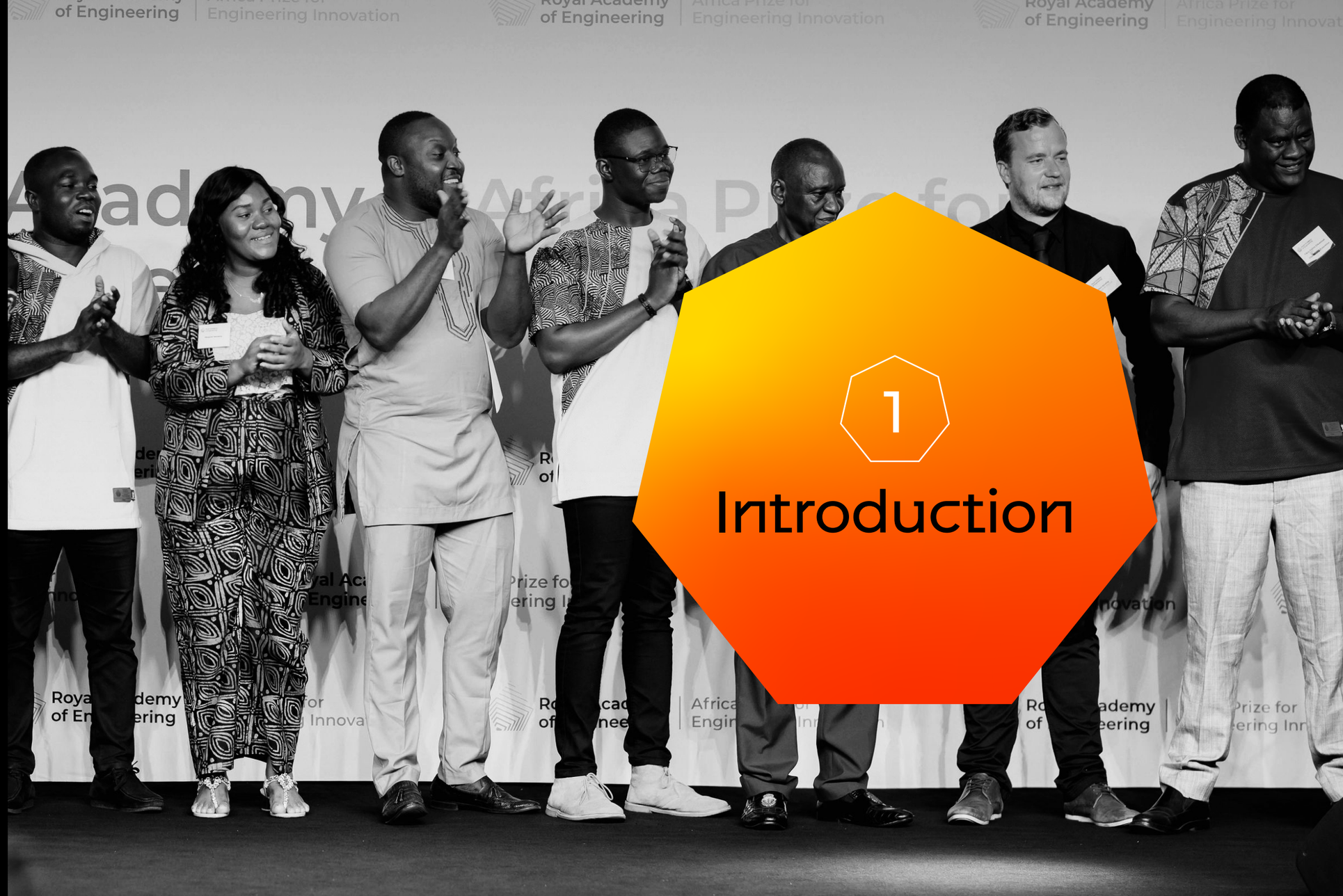

Royal Academy of Engineering
10
Africa Prize for Engineering Innovation
10 Years of the Africa Prize
ThinkBikes

Contents



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Introduction

Foreword

In 2012, the Royal Academy of Engineering published the *Engineers for Africa* report, which identified the scale of the engineering capacity needs in African countries south of the Sahara and prompted the creation of the Africa programmes at the Academy. The **Africa Prize for Engineering Innovation** is one of those three programmes, and I am delighted to celebrate the ingenuity, determination and excellence we have seen over the last 10 years.

Since its inception in 2014, the Africa Prize has offered crucial commercialisation support to 149 ambitious African innovators who have developed scalable engineering solutions to local challenges, demonstrating the importance of engineering in improving quality of life and enabling economic development. Each year, we receive hundreds of applications across Africa and our judges have the challenging task of selecting just 16 to participate in the programme.

The programme has paved the way for our alumni to access further financing, scale their solutions, and join a global community of exceptional engineers supported by the Academy. More than 70% of the alumni's engineering and technology businesses now generate revenue and we are proud to see the ongoing impact of these businesses on their local communities.

None of this would be possible without the generosity of our funders and supporters who believe, as we do, that engineering is a fundamental enabler of sustainable development. We are deeply grateful to the many Academy Fellows and friends who have volunteered their time and expertise to mentor the next generation of entrepreneurs.

Their guidance has been invaluable in helping these early-stage ventures commercialise their technologies and bring their innovative engineering solutions to market.

As we mark 10 years of the Africa Prize, we celebrate all those who have made this journey possible.

Dr Hayaatun Sillem CBE
CEO of the Royal Academy of Engineering

Africa Prize for Engineering Innovation

Founded in 2014, the Africa Prize for Engineering Innovation is the continent's biggest award celebrating locally impactful engineering breakthroughs.

The Prize awards crucial commercialisation support to ambitious African innovators developing scalable engineering solutions to local challenges. These innovations show how important engineering is for improving quality of life and economic development.

Engineering is central to solving everyday challenges faced across Africa, such as access to energy, clean water, food and employment. The Africa Prize is helping to grow engineering capacity and support sustainable development across the continent.

The Africa Prize is open to entrepreneurs from all engineering disciplines living and working in African countries below the Sahara. The programme is designed to help engineers achieve commercial success from their innovations. It has a track record in identifying engineering entrepreneurs with significant potential, many of whom have gone on to achieve greater commercial success and social impact.

One innovator can change a community; a network can transform a continent.

Rewarding African Innovation

The Africa Prize for Engineering Innovation aims to stimulate, celebrate and reward innovation and engineering entrepreneurship in Africa.

Applications are invited from entrepreneurs and engineers in African countries below the Sahara who have developed an innovative product or service that can provide scalable solutions to local challenges, with a particular emphasis on sustainable social and economic development.

The Africa Prize programme culminates in a showcase event where a winner is selected to receive £25,000, along with three runners-up, who are each awarded £10,000. An additional One-to-Watch award of £5,000 is given to the most impactful pitch from the remaining shortlist, decided by an audience vote.

Following the programme, Africa Prize participants gain lifelong business support through the Africa Prize Alumni Programme, and receive exclusive opportunities for funding, development and guidance.

The Africa Prize offers a unique benefits package for up to 16 shortlisted participants to help accelerate their business, including:

- **access** to business and technical expertise and sector specific engineering mentoring
- **bespoke** press coverage and communication support
- **eight month** tailored training programme
- **access** to the Academy's network of high-profile engineers and business experts in the UK and Africa
- **the opportunity** for finalists to present their innovation to a judging panel at the Africa Prize showcase event
- **prize money** of up to £25,000

10 years of the Africa Prize

March 2014
The inaugural Africa Prize for Engineering Innovation opens for applications.

June 2015
Dr Askwar Hilonga, Tanzania, wins the first Africa Prize for his innovation, Nanofilter.

May 2016
Arthur Zang, Cameroon, wins the second Africa Prize for his innovation, Cardiopad.

May 2017
Godwin Benson, Nigeria, wins the third Africa Prize for his innovation, Tuteria.

June 2018
Brian Gitta, Uganda, wins the fourth Africa Prize for his innovation, Matibabu.

March 2019
The Africa Innovation Fellowship (AIF), for African women innovators, is launched in partnership with WomHub.

May 2019
Funding is secured from the UK government to launch the Africa Prize Alumni Programme.

June 2019
Neo Hutiri, South Africa, wins the fifth Africa Prize for his innovation, Pelebox.

May 2020
The Academy supports more than 50 engineering entrepreneurs to address the consequences and impacts of COVID-19 through Project CARE (COVID Africa Rapid Entrepreneurs).

September 2020
Charlette N'Guessan, Côte d'Ivoire, is the first woman to win the Africa Prize with her innovation, BACE API.

July 2021
Noël N'Guessan, Côte d'Ivoire, wins the seventh Africa Prize for his innovation, Kubeko.

June 2022
Norah Magero, Kenya, wins the eighth Africa Prize for her innovation, Vaccibox.

November 2022
The Academy and WomHub announce a five-year extension of the Africa Innovation Fellowship.

November 2022
The Africa Prize Alumni Programme formed its first Alumni Representative Committee (ARC), led by Edmund Aijuka and Beth Koigi. The ARC feeds into the Africa Prize Steering Committee.

March 2023
10th anniversary applications open in Nairobi, Kenya at the Sankalp Africa Summit.

July 2023
Engineering a Better World Internships (EaBW) place UK engineering students with Africa Prize alumni businesses for a fully funded work placement.

July 2023
Anatoli Kirigwajjo, Uganda, and Edmund Wessels, South Africa, are the first joint winners of the Africa Prize for their respective innovations, YUNGA and FlexiGyn, respectively. The announcement takes place at the first hybrid Africa Prize Final in Accra, Ghana.

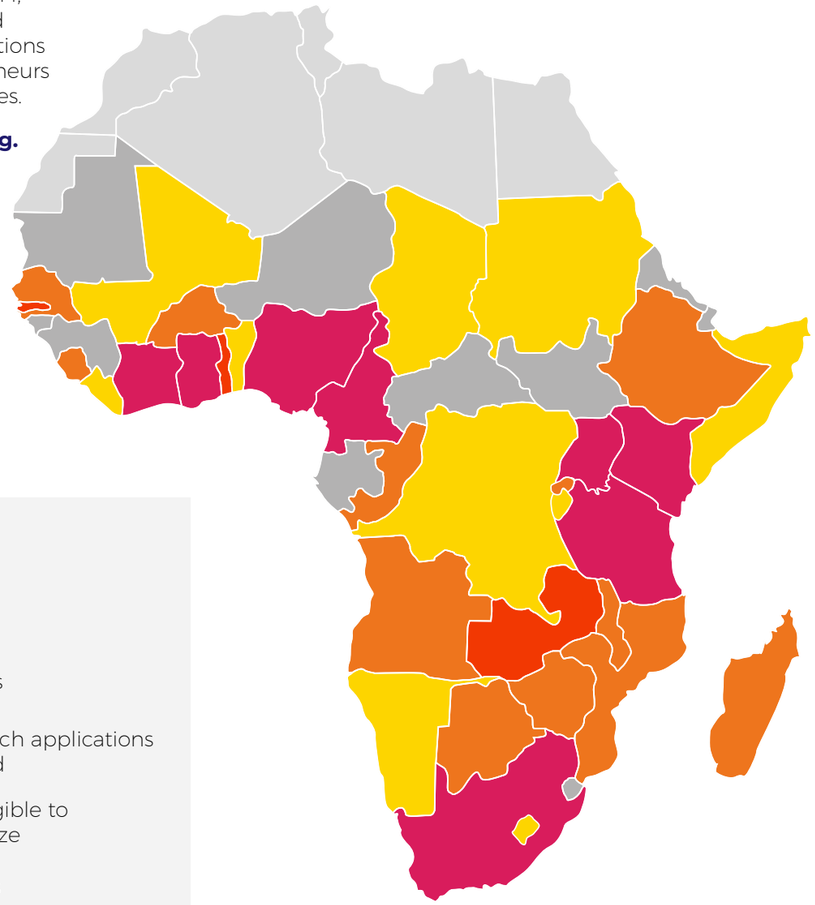
December 2023
Launch of Advance 2024, a scale up programme for innovations at technology readiness level (TRL) 7 and above, run with the Royal Academy of Engineering's Leaders in Innovation Fellowship programme.

January 2024
The Africa Prize holds the Africa Prize Alumni Medal showcase in London, UK, to celebrate its 10th anniversary.

Geography

The Africa Prize nurtures a wealth of diverse engineering talent across Africa. Since 2014, the programme has received applications from over 37 nations and supported 149 entrepreneurs across more than 20 countries.

Please visit **africaprize.raeng.org.uk** to see the full list of countries.



- winners
- finalists
- shortlisted entrants
- countries from which applications have been received
- other countries eligible to enter the Africa Prize
- ineligible countries

2

Creating impact

Impact of the Africa Prize

Innovators supported by the Prize have created more than 28,000 jobs, raised over $39 million in third-party funding, and developed solutions to every Sustainable Development Goal on a local level.

The Prize has also established an Alumni Programme, with 71% of Africa Prize alumni currently generating revenue. Our alumni have also raised $37 million in grants and equity.

The Africa Prize has awarded over $3 million to support our community. Judges, mentors and expert reviewers for the Africa Prize for Engineering Innovation have provided over 4,000 hours of support to entrepreneurs since the Prize was established. Cumulatively, this time is valued at over $13 million.

Innovators supported by the Prize have raised over $39 million in third-party funding

Over 89% of alumni businesses are still active, and, collectively, are:

working across over **40 countries** in Africa and beyond

representing **15 engineering disciplines**

delivering over **470 products or services** to market

holding over **140 patents** or other IP certification

featured in over **3,200 pieces of media coverage**

Money

Alumni have raised over $39 million in financing, including:

EQUITY

Over **$21 million** raised in equity investment

GRANTS

Over **$14 million** raised in grant funding

OTHER

Over **$3 million** raised in other external funding

People

Africa Prize products or services are estimated to have benefited over 10 million people, including:

Over 1 million women

Almost 2 million youth

Almost 30,000 persons with disabilities

Jobs

Africa Prize businesses have created over 28,800 jobs, including:

Over **21,750** jobs for women

Over **10,800** jobs for young people*

Over **530** jobs for persons with disabilities

* Young people refers to people under the age of 25.

3

Diversity and inclusion

Supporting African women entrepreneurs in STEM

Entrepreneurship and innovation have the unique potential to empower people whose voices have traditionally been left out of the conversation.

Africa is the leading continent for women entrepreneurs – where more women own businesses than men. However, more often than not, these businesses do not have the opportunity to grow and succeed due to gender stereotypes, financial exclusion, lack of support and access to networks to scale their business ventures.

The Africa Prize for Engineering Innovation has supported 36 women from 16 countries across the continent with crucial business training and mentorship. To increase support for women innovators, the Africa Prize created an effective talent pipeline for the programme, the Africa Innovation Fellowship (AIF) programme. Established in partnership with WomHub, AIF supports women who are developing engineering ventures on the African continent and encourages more women to consider applying to the Africa Prize.

2021 saw the first woman crowned winner of the Africa Prize in its history, as well as three out of the four finalists being women. All of these women came through the AIF feeder programme, run in partnership with WomHub.

Of the businesses that the Africa Prize supports, many have prioritised hiring and supporting women, young people, and people with disabilities. Almost half of Africa Prize-supported businesses employ women and young people. One business hired people with disabilities for their entire team, while others focus on providing better solutions for disabled people.

Another business is centred on providing inclusive solutions that improve health, wellbeing, and access to education for individuals with special needs.

20% The proportion of women applicants has increased from **9% in 2014 to 20% in 2023**

Two women have been crowned winners of the Africa Prize, while eight have been finalists. **20%**

50% **Over 50%** of new jobs created by our alumni are going to women.

Africa Innovation Fellowship

Since 2019, the Africa Innovation Fellowship (AIF) has been supporting women-founded science, technology, engineering and manufacturing (STEM) entrepreneurs across Africa.

The programme was created to develop a more gender-diverse engineering workforce and is run in partnership with WomHub.

Every year, AIF offers an eight-month development opportunity for African women entrepreneurs in STEM, with an early-stage engineering innovation or a startup, who are looking to grow and scale through personal leadership and business development.

The programme aims to develop women-founded businesses by providing entrepreneurial incubation, access to leading-edge content, and networks and mentorship support.

The AIF programme is a hybrid offering, including:

- a fully funded, in-person entrepreneurship bootcamp
- expert engineering council
- mentorship
- financial coaching

AIF has supported 158 women from 22 countries since its inception. Eight have been shortlisted for the Africa Prize, including Charlette N'Guessan, who was the first ever woman to win the Africa Prize.

In 2022, the Royal Academy of Engineering and WomHub committed to an five-year partnership to continue supporting women in engineering and to prepare any AIF alumna to apply to the Africa Prize for Engineering Innovation.

AIF has supported
158 women from 22 countries
since its inception

"You challenged me to look around for problems in my community and come up with solutions for them. The truth is there are so many problems around, and you ignited [my] passion to start thinking of innovative solutions to tackle them."

"I certainly do feel like I am part of a community of entrepreneurs; a prestigious one at that. I have entrepreneur friends in different parts of the continent which makes it easy for me to understand and navigate those markets."

4

Africa Prize Alumni Programme

Accelerating business growth

Our community of 149 talented innovators represent a wide range of sectors and countries across Africa.

After the core Africa Prize programme, continuous support is vital as they continue to develop their businesses.

The shortlist join an alumni network to continue their individual and business journey.

This community provides a safe space for former participants to interact with other alumni and draw from each other's expertise.

It also offers them an opportunity to give back to their community and support those working in similar spaces.

Our Alumni Programme offers many opportunities for growth and development, including:

- grant funding
- further training
- communications support
- legal support
- networking

The Africa Prize has also offered subscriptions to personal development tools such as Headspace, participation in mentorship and buddy programmes, attendance to conferences and webinars, event and conference sponsorship, as well as speaking opportunities.

"I come from an engineering background, and it was the first time I was learning how to turn my innovation into a business."

Providing continuous support

Since 2019, the Africa Prize has awarded over 140 grants to the Africa Prize alumni community, totalling more than $2.6 million in grant funding.

These include small business, business acceleration, service delivery, travel and training, and COVID-19 response grants. These grants have enabled the alumni to strengthen and scale their businesses, and further impact their local communities.

The Africa Prize is proud to offer alumni more than just grants. Alumni can acess free resources, such as communications support, digital skills training, and legal support, and the Academy is continually exploring how to provide further value.

Summer internships: In 2023, the Africa Prize matched eleven students from the University of Cambridge and University College London with six innovators from the Africa Prize's alumni network for fully funded, in-country Engineering a Better World Internships.

Communications support: the Africa Prize's communications partners have dedicated resources to assist alumni with their communications. This includes branding, messaging, press release drafting and more.

Legal support: The Africa Prize has partnered with Advocates for International Development (A4ID), a global charity that works with the world's leading law firms to provide our alumni community with access to pro-bono legal support.

"I now have a community that I can tap into when going into many African countries. There have been multiple opportunities for alumni to collaborate and through this I have a great community I can reach out to, especially when going into a new country. The wealth of knowledge in the alumni is vast and people are always ready to help – it's like a family."

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Meet the Africa Prize Alumni

The profiles detail the original innovations that were nominated for the Africa Prize, but some of the companies have diversified their businesses since that time.

Agriculture

Africa Prize alumni have introduced transformative agricultural solutions that address critical challenges, such as preventing harvest loss and reducing food waste. From smart storage solutions for farmers to sensors collecting crop data, these innovations are boosting productivity, supporting livelihoods, enhancing sustainability, optimising resource efficiency, and enhancing overall food security across Africa.

PenKeep

Adaeze Akpagbula, Nigeria, 2024 shortlist

PenKeep is a climate-smart remote sensing device that monitors and controls environmental conditions in poultry farms, ensuring chickens remain at optimal health and productivity. The solar-powered IoT device is designed to be reactive and proactive, reducing the need for human intervention in regulating farming conditions. Farmers using PenKeep have reported a 72% decrease in mortality, and a 40% improvement in feed conversion ratio.

GrainMate

Isaac Sesi, Ghana, 2020 shortlist

GrainMate is a simple handheld meter that accurately measures the moisture content of grains to prevent post-harvest losses. The easy-to-use aluminium probe is simply inserted into a bag of grain. Temperature and humidity sensors on the tip of the probe take an average reading of the whole bag to provide a moisture reading. The reading is then displayed on a detachable handheld unit after two to three minutes. GrainMate can also be used by poultry farmers to test grain-based poultry feed before purchase, to ensure poultry are healthy and lay high-quality eggs.

DryMac

Adrian Padt, South Africa, 2020 shortlist

DryMac is a containerised drying system that uses biomass to dry crops without using electricity. Instead, waste products, like maize stalks, grass or wood chunks, are burnt to create heat. The drier has ducts controlling airflow to and from the furnace to distribute heat evenly. This ensures the product – which is fed through the container on rollers – is dried uniformly. The drier replaces traditional methods of crop preservation like refrigeration and dehydration, both of which use large amounts of energy.

HWESOMAME

Daniel Taylor, Ghana, 2018 shortlist

HWESOMAME, which means 'look after it for me' in Twi, is a low-cost, smart sensor farmers can use to accurately measure soil conditions. The sensor measures soil moisture, temperature, salinity and levels of organic matter. Output data is converted into an easy-to-understand format and sent to the farmer via text or a voice-automated phone call in a local language. It helps farmers decide which fertiliser to use and how frequently to water their crops, as well as helping them minimise labour costs and farm visits. Farmers will be able to increase crop productivity by as much as 50% when they use HWESOMAME, as well as boosting crop quality and profits.

ProbiGal

Dr Deon Neveling, South Africa, 2023 shortlist

ProbiGal is a host-specific, multi-strain probiotic for chickens, designed to promote gut health and prevent bacterial infections. It comes as a powder to be mixed with the chickens' drinking water. It helps farmers to promote gut health while avoiding excessive antibiotic use, which can lead to bacteria becoming drug resistant and threatening both human and animal health.

Farmz2U

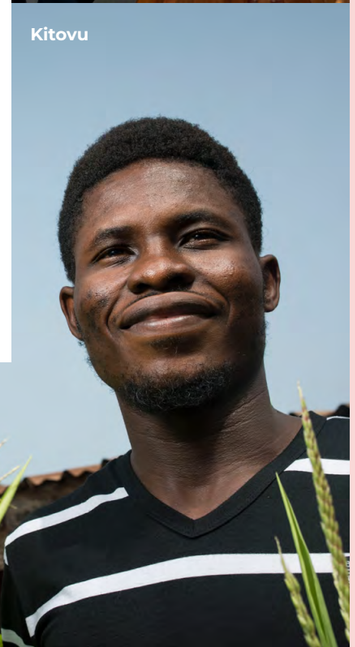
Aisha Raheem, Nigeria, 2020 finalist

Farmz2U is a digital platform that helps farmers, suppliers and agricultural buyers to prevent food waste. Farmers tell the application how much land they have, what crops they want to grow, what their budget is, and even their target profit. Farmz2U calculates how many seedlings the farmer should get, what fertiliser and pesticides to use, and provides training guides and videos for certain crops. Farmers can also find out where there is demand for their product, track orders and invoices, and find storage locations. Farmz2U even allows users to access financing, insurance, and receive weather reports and warnings.

Kitovu

Emeka Obewe, Nigeria, 2018 shortlist

Kitovu is an online platform that helps rural and remote smallholder farmers make data-driven decisions to reduce costs, increase yields and maximise sales. Using data science and remote sensing, the app shares tailored agronomic advice to farmers, such as the right fertilisers to use in the right quantities and crop health monitoring. The platform also facilitates access to guaranteed produce markets, storage solutions, and financing opportunities.



Agriculture

The Early Crop Pest and Disease Detection Device

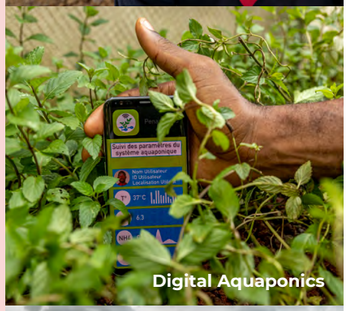
Esther Kimani, Kenya, 2024 shortlist

The Early Crop Pest and Disease Detection Device is a solar-powered tool using AI- and machine learning-enabled cameras to rapidly detect and identify agricultural pests and diseases, empowering smallholder farmers to reduce crop losses through swift remedial action. The patented innovation uses continuous image capturing and analysis to alert farmers within five seconds of an infestation and suggests the best intervention.

Smart Brooder

George Chege, Kenya, 2019 shortlist

Smart Brooder is an intelligent energy management system to automate chicken coops, giving farmers more freedom and peace of mind. Pre-programmed to understand the chickens' needs at every stage of their development, the Smart Brooder system enables farmers to remotely manage their chicken coops. It can activate and deactivate electric and gas heating systems, measure temperatures and humidity and advise farmers and workers when physical intervention is required.



Digital Aquaponics

Flavien Kouatcha Simo, Cameroon, 2023 shortlist

Digital Aquaponics is a portable fish farm that uses fish waste to boost production of organic vegetables and herbs. The system enables ten times more food to be grown with just 10% of the water. Individual-sized versions are made with recycled wood and tarpaulin. Industrial-sized units are made from shipping containers, and can produce 800 kilograms of fish and 1,600 kilograms of vegetables every three months. A farmer can recoup the cost of the unit within 12 months. Data from sensors is transmitted to a web app, allowing users to track the health of their fish and plants. A mobile app provides aquaponics tutorials and functions as an information-sharing platform for producers and consumers.

MAVUNOLAB Solar Dryer

Evodius Rutta, Tanzania, 2024 shortlist

The MAVUNOLAB Solar Dryer facility is a low-cost solar-powered dryer developed to help small-scale fish processors and farmers in off-grid locations avoid post-harvest food losses. It enhances food safety and hygiene for perishable food products, particularly fish, fruits, and vegetables. The mobile solar-drying facility has multiple aluminum drying chambers (measuring 1.2 x 1.8 x 0.6 metres) with a mounted 18-watt solar panel powering three fans. Unlike other existing fish processing practices, which can take up to 12 hours, the MAVUNOLAB Solar Dryer can process fish in less than 6 hours, significantly reducing post-harvest losses and contamination.

Agriculture

Aquaprotein

Jack Oyugi, Kenya, 2020 shortlist

Aquaprotein is protein-rich animal food made from invasive water hyacinth harvested from Lake Victoria. Using a patented fermentation process with local fungi, water hyacinth is processed to make an affordable animal feed for poultry, dairy and fish farmers. This process also removes contaminants from the plant and softens the fibrous lignose that makes it tough to chew. Oyugi has also patented a new technology to produce fish protein in a vertical farm to replace conventional fish cage farming, alleviating pressure on lakes and oceans.

Coldbox Store

Adekoyejo Kuye, Nigeria, 2022 shortlist

Coldbox Store is a solar-powered, walk-in refrigeration solution and distribution centre for produce sold in communities with poor grid infrastructure. Temperatures are adjustable, digital sensors reduce power consumption rates, insulation prevents energy loss and variable speed compressors adjust to the cooling needs in the room at any given time. The pilot Coldbox Store stores up to 5,000 kilograms of farm produce and runs on a 7.7 kilowatt solar installation with a battery storage system. Farmers can access services on a pay-as-you-store subscription model, making it more affordable to use. The business also offers a distribution service to help farmers access high-value markets in bigger cities.

Sisal Decorticator

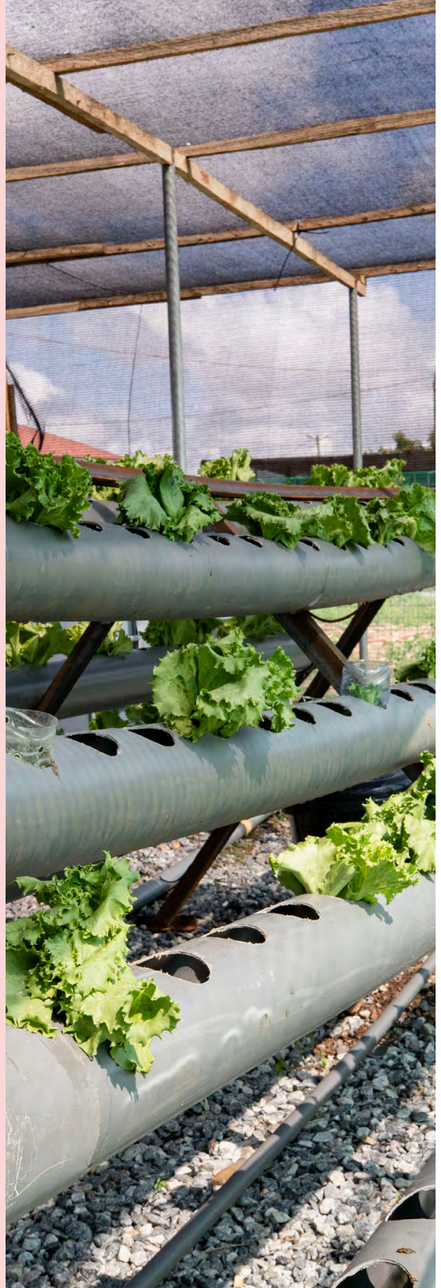
Joel Kariuki, Kenya, 2017 shortlist

The Sisal Decorticator is a mechanised peeler which makes it more profitable for natural sisal fibre to be processed. This gives the industry a boost in the global market and makes natural fibres a viable competitor for synthetics.

Aevhas

Jacob Azundah, Nigeria, 2021 shortlist

Aevhas is a high-efficiency processing machine that turns the cassava plant's tuberous roots into garri – a powdery flour and diet staple across West Africa. Processing cassava roots is laborious and time-consuming: conventional garri processing machines can take up to four hours to sieve and fry, only producing a single basin of garri. Aevhas sieves and fries more cassava root than traditional methods in just 20 minutes, reducing barriers to profitability in the sector. The technology offers two heating modes: charcoal and wood fire or gas, depending on the customer's resources.



Aquaponics Hub

Lawrencia Kwansah, Ghana, 2022 shortlist

The Aquaponics Hub is a starter kit for users to set up their own aquaponics system at home, complete with fish, crops, smart sensors, an app to monitor the system, and an online marketplace to sell produce.

Lawrencia Kwansah, an aquaculturist, developed the system with her co-founder to give families options for urban farming during the COVID-19 pandemic.

Aquaponics is a closed farming system in which water is pumped from fish tanks to plants. Nutrient-rich fish manure feeds plants, which in turn filter water that is pumped back to the fish tanks. Crops grown by aquaponics don't require soil, and the system is particularly useful in urban settings where arable land is limited.

The Aquaponics Hub is solar-powered so that it can be used in off-grid areas, or where power outages are common. The kit also comes in various sizes to adapt to the user's space and needs, and doesn't require much technical expertise to be used. Smart sensors monitor key factors of plant growth and fish health, including temperature, nutrient levels, pH and oxygen. Users can monitor these on the app, which contains instructional materials on how to use the system.

A digital marketplace gives owners of Aquaponics Hub kits a place to sell their crops and fish to restaurants and grocers, and provides retailers with additional and affordable sources of quality-controlled produce. The marketplace also helps users find fish food, seeds and kit components.

A market study conducted by Kwansah and her team showed that 90% of vegetable farmers they spoke to were willing to convert to an aquaponics system. The team is currently in the process of training 250 farmers in aquaculture farming using the Aquaponics Hub.

"Aquaponics is a great way to maximise space and empower urban households. It's often dismissed as too expensive or too technical a method of farming, but we don't believe it's either, and our goal is to use it to improve food security across Africa."

Sparky Dryer

Okettayot Lawrence, Uganda, 2018 shortlist

Sparky Dryer is a low-tech dehydrator that dries fruits and vegetables to extend their shelf life from two days to two years. The dryer is powered by biofuel made from organic waste such as leaves and branches. Sparky Dryer removes moisture from foods five times faster than electric dryers and 10 times faster than open sun drying. It is also three times less expensive to buy than electric dryers and more reliable, clean and convenient than open sun drying (which is also weather dependent). Sparky Dryer is fitted with a catalytic converter to ensure that no harmful gases are released during the drying process.

Sparky Dryer

I3S

Marie Ndieguene, Senegal, 2021 shortlist

I3S is an ecologically friendly and affordable storage solution designed to solve the problem of post-harvest loss in agriculture by preserving agricultural products for longer periods of time than traditional storage. I3S uses recycled tyres for the walls of the storage unit, linked by sticks and recycled plastic bottles for stability. Recycled plastic bags are used for isolation and the unit is then covered in a red soil called laterite. This functions as the thermic envelope, ensuring a cool temperature within the unit. I3S has recycled more than 20,000 tyres, 20,000 plastic bags and 30,000 bottles, showing how waste pollution can be turned into a food security solution.

I3S

Tryctor

Olufemi Odeleye, Nigeria, 2016 shortlist

Tryctor is a three-wheeled mini-tractor, designed based on a motorbike. Using low-cost local components, it is easy to maintain, efficient and simple to operate. The Tryctor is manufactured in Nigeria and provides affordable mechanisation to smallholder farmers and cooperatives. With its size-to-power ratio, it is a multipurpose vehicle that can be used to transport goods and even generate power.

Agriculture

The Vertical Farm

The Vertical Farm

Paul Matovu, Uganda, 2019 shortlist

The Vertical Farm is an easy-to-build wooden farm-in-a-box designed to capitalise on waste in urban areas. Acting as a repository for organic waste, a central column contains earthworms that break waste down into fertiliser. The fertiliser, which sinks to a handy drawer at the base of the box, can then be used to supplement the soil in beds that surround the central column. Locally manufactured outside of Kampala, the Vertical Farm is designed to both provide healthy food and a sustainable means to make additional income in the space of an everyday home. Since 2022, the company has also started working with refugee settlements, supporting over 3,000 active refugee households.

The Mechanical Cassava Harvester

Professor Emmanuel Bobobee, Ghana, 2016 shortlist

The Mechanical Cassava Harvester is an affordable, tractor-mounted mechanical tool that turns up soil to expose cassava without damaging it. It is designed to make harvesting the root vegetable less labour-intensive, which is its biggest constraint to commercial production. It takes five to ten minutes to harvest one cassava plant by hand, depending on the softness of the soil. The mechanical harvester can uproot one plant every second. The innovation is in use in Ghana, Nigeria, Côte d'Ivoire, South Africa and Jamaica. The team aims to educate and train more smallholder farmers to change from traditional random planting to adopt a modern mechanised approach that complies with mechanical harvesting.

3-D-3-P Dryer

3-D-3-P Dryer

Professor Dele Sanni, Nigeria, 2019 shortlist

The 3-D-3-P dryer is a simple system that dries grains and cereals using conduction rather than hot air, which is conventionally used in industrial dryers. This makes the 3-D-3-P system a far more affordable option than conventional dryers. Based on the same principle as simply heating grain in a pan over fire, a series of three drums is heated to directly dry out the grains travelling through them. Rollers ensure that grains don't burn, and the gas heating the system is adjustable at each stage.

Agriculture

Safi Organics

Samuel Rigu, Kenya, 2020 shortlist

Safi Organics are locally produced organic fertilisers made with agricultural waste, such as cassava peels and rice husks. Using a kiln developed with technology from the Massachusetts Institute of Technology (MIT), Safi Organics turns discarded husks and other agricultural waste into a powerful base for organic fertilisers. It is then mixed with a proprietary nutrient mix, made from local ingredients and imported algae, and transformed into fertiliser. Safi, which means 'clean', buys waste materials from farmers and mills in Mwea and across the country to create a range of custom fertilisers, such as for planting, topping and a special acidic mix for tea plantations.

Safi Organics

Illuminum Greenhouses

Taita Ngetich, Kenya, 2016 shortlist

Illuminum Greenhouses uses modular greenhouses and precision farming tech help smallholder farmers grow more using fewer resources. Using proprietary IoT sensors with AI, tracks productivity, soil health and farmer behaviour. The sensors collect data on temperature, humidity and soil moisture and send this to farmers via text message, allowing them to monitor and regulate their greenhouse without having to be on the farm. The system works on all types of phones and the use of solar power is ideal for rural areas with poor access to energy. Data collected is also shared with lending institutions to improve their credit score and unlock financing for farmers in Africa.

SolarKoodo

Safiatou Nana, Burkina Faso, 2019 shortlist

SolarKoodo is a mobile solar water pumping system that helps smallholder farmers to pull water from boreholes in off-grid regions where water tables drop very low. SolarKoodo, which means 'solar crops' in Mooré, can also be used to electrify homes. An adjustable solar panel powers a motor that pumps water from boreholes, and the entire system is built to be highly mobile and adjustable. Instead of permanent installations that have to remain in one place, the SolarKoodo can be shared by a collective of farmers because it can be moved from one borehole to the next as easily as a handcart.

SolarKoodo

Chemical

In the chemical sector, Africa Prize innovators have developed transformative solutions that address environmental challenges and promote sustainability. From sustainable packaging made from agricultural by-products to clean cooking ethanol made from invasive water hyacinth, these innovations are reducing plastic waste and transforming agricultural by-products into valuable resources.


Agelgil


Cathel

Agelgil

Afomia Andualem, Ethiopia, 2022 shortlist

Agelgil is a sustainable range of packaging and tableware made from agricultural by-products such as wheat and rice straw. The Agelgil team sources crop waste and water hyacinth, a highly invasive plant, from farms around them, providing farmers and communities with additional income streams. Crop waste is then turned into sturdy and reliable packaging through a series of processes using key machinery developed by the team. Finally, all by-products are turned into fertiliser, which is sold back to local farmers, reducing the process' impact on the environment further.

Macjames MMDC-11

Chinenye Justin Nwaogwugwu, Nigeria, 2015 shortlist

Macjames MMDC-11 is an affordable, heavy-duty, multi-purpose cleaner that removes organic and inorganic dirt from washable surfaces. Produced using biodegradable raw materials, it is environmentally friendly, non-corrosive and non-acidic. It is particularly suited to manufacturing, mining, and agricultural applications. MMDC-11 was the first product in a line of 60 and today, Macjames' eco-conscious products can be found across Africa in sectors from oil and gas to agriculture and hospitality. The multi-purpose products allow consumers to spend less on specialised chemicals, making the cleaning experience more efficient, and sustainable products more accessible.

Cathel

Catherine Tasankha Chaima, Malawi, 2020 shortlist

Cathel is an antibacterial soap created from natural agricultural waste and local ingredients using indigenous knowledge. Several commercial soaps in Malawi rely on Triclosan, which kills not just harmful bacteria, but also the bacteria required to maintain healthy skin. Instead, Cathel uses natural ingredients such as moringa, which has antibacterial properties, but is less harsh than industrial-grade products such as Triclosan. The company has also diversified its offering, producing cooking oil from low-value pumpkin seeds and then using the waste products to produce its antibacterial soap, further contributing to the circular economy.

MycoSubstitutes

Zarouk Imoro, Ghana, 2024 shortlist

MycoSubstitutes is an eco-friendly sewage treatment that uses viruses, bacteria, and fungi to treat and feed on faecal waste, using it to produce yarns and a leather substitute. It uses viruses known as bacteriophages to remove bacteria from faecal sludge, reducing the health risks of informal toilets and dumping of faecal sludge. Common fungi are then introduced to the remaining solid waste, which functions as a nutrient to cultivate mycelia. Toilet paper in the sludge functions as a carbon source for mycelial growth. After between 72 and 120 hours, 500 grams of mycelia are produced from every 10 litres of sludge.

MycoSubstitutes

Dissolv Bioplastic

Tshepo Mangoele, South Africa, 2021 shortlist

Dissolv Bioplastic is a bioplastic made from plant waste, which is water-soluble, compostable and biodegrades at accelerated rates. Its properties are similar to petrochemically derived plastics use to manufacture products such as electronics, cosmetics and textiles. However, while current available bioplastics can take three to six months to break down in the right conditions, Dissolv Bioplastic biodegrades in roughly 61 days. It is designed to dissolve in water within 36 to 72 hours, depending on the product. It is also compostable, capable of being broken down into its natural elements without producing toxic by-products, like its synthetic counterparts.

Dissolv Bioplastic

Kubeko

Noel N'guessan, Côte d'Ivoire, 2021 winner

Kubeko is a set of low-cost biowaste processing equipment designed for smallholder farmers in West Africa to efficiently manage and generate income from biowaste. The Kubeko composter and biodigester are both specifically designed to ferment agricultural post-harvest by-products. The biodigester transforms liquid and solid green waste into cooking gas and liquid compost. The composter is fed and aerated daily for 15 days, producing 150 kilograms of compost each month. The equipment can be configured to run on an energy grid or on solar power. By using this waste, Kubeko can help Ivorians generate extra income, dramatically improving the lives of thousands of farmers and their families.

Kubeko

Education

In the education sector, Africa Prize innovators are revolutionising learning experiences with dynamic tools and systems. From robotics tools for children to online platforms connecting learners with local experts, their innovations are bridging educational gaps, inspiring learners to pursue STEM subjects and empowering educators and learners across the continent.

Arobot

Zenafri

eLearning Solutions

Arobot

Cristovão Cacombe, Angola, 2023 shortlist

Arobot is a robotics learning tool for children, modelled to resemble a three-wheeled Angolan motorbike known as a 'kupapata'. Arobot comes unassembled and must be built from 3D-printed parts. It is usually assembled by groups of four children, which encourages collaboration and teamwork. Users can then code simple tasks in C++, Scratch or other programming languages, for example, to use its sensors to move in all directions, avoid obstacles or follow a specific path. The team aims to provide practical STEM education and help students develop foundational skills in electronics engineering, programming and software development.

Zenafri

Elizabeth Kperrun-Eremie, Nigeria, 2019 shortlist

Zenafri creates mobile apps and multimedia content that teach young children basic numeracy, literacy and life skills in their own language. Teseem, the first app, teaches toddlers their first words and numeracy in vernacular languages such as Hausa, Igbo, Yoruba and Swahili. When children get old enough to follow storylines, Afrotalez narrates original stories based on traditional African folklore, with an educational element added in. Today, Zenafri apps have been downloaded more than 100,000 times. The team continually improves the apps using feedback from current users and has also launched a decision-based storytelling app for teenagers.

eLearning Solutions

Esther Gacicio, Kenya, 2018 shortlist

eLearning Solutions (ELS) offers courses to anyone, anywhere, through any internet-enabled device. The app allows for self-paced learning, group classes, access to tutors, or learning through games and videos. It also hosts custom-made courses for organisations wanting to use it as an online training platform. ELS has an extensive range of ready-to-use courses aimed at meeting the learning needs of communities. Recently, through its new arm ELSAT Hub, the business has developed a soft skills programme to support young people in tertiary institutions and those entering the world of work.

SuaCode.ai

George Boateng, Ghana, 2021 shortlist

SuaCode.ai is a smartphone app which uses artificial intelligence (AI) to teach coding remotely. The app enables young Africans to learn to code in monthly online cohorts. The software includes course materials in English and French, quizzes and coding assignments, an automated grading system and an AI teaching assistant named Kwame, after Ghana's first president, Dr Kwame Nkrumah. The app hosts monthly online coding courses for individuals and is also offered to schools and organisations who wish to enrol their students or employees in their own 'SuaCode Classroom'.

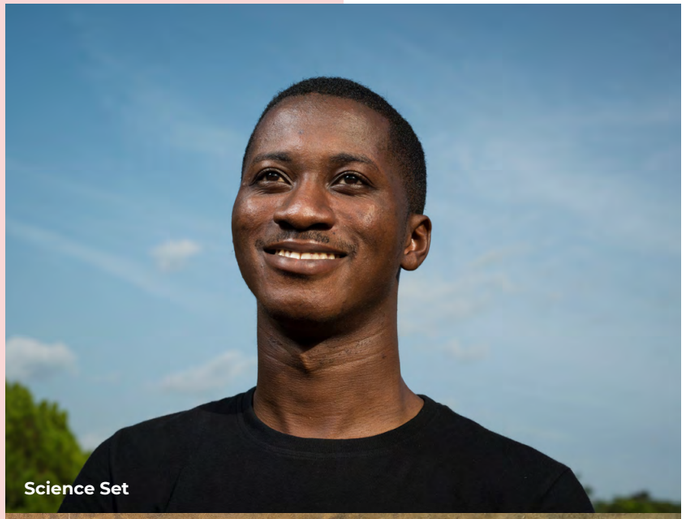
Since its launch, the team have over 2600 learners across 43 African countries. Alumni have been offered coding internships and jobs, while others are now studying computer science and engineering at top universities in the US.

Tuteria

Godwin Benson, Nigeria, 2017 winner

Tuteria is an online platform that connects people seeking to learn anything with verified local experts who can teach them what they want to learn, as well as ensuring safety, accountability and quality learning delivery. Tuteria provides an easy way to find, book, pay for, schedule and track lessons with vetted teachers, thereby bridging the learning gap, and creating a healthy source of income for numerous teachers, graduates and students in Africa.

SuaCode.ai



Science Set

Lab and Library on Wheels

We are saddened by the passing of our dear friend, Martin Bruce (d. 2024). An active member of the Africa Prize community, Martin lent his support to the planning of the 2023 final and the summer internships. His commitment to and energy for improving education in Africa leaves impactful mark on the many lives he touched.

Science Set

Michael Asante-Afrifa and Charles Ofori Antipem, Ghana, 2018 finalist

The Science Set is a portable toolbox that contains the materials needed for every basic science experiment across different science curricula in Africa. The Science Set is the size of an average textbook, fitting easily into a school bag and on a school desk. Science Set contains 45 different parts, including circuit boards, wires, an electromagnet and mini lightbox to perform 26 experiments that are part of the primary and junior high school syllabus. A manual with clear instructions is included. The Science Set is compact and affordable yet enables students to perform laboratory-grade experiments without the need for a traditional laboratory. A 2015 study by the Organisation for Economic Co-operation and Development showed that out of 76 countries, Ghana and South Africa ranked the lowest in science education. Science Set aims to solve the lack of practical science education in Africa and inspire learners to pursue science after school. The kit is easy to use, quick to set up and designed to seamlessly integrate into the classroom.

Lab and Library on Wheels

Josephine Godwyll and Martin Bruce, Ghana, 2020 shortlist

Lab and Library on Wheels is a mobile, solar-hybrid cart with gadgets and e-learning resources for under-resourced schools. Each unit contains laptops, tablets and practical teaching and learning materials, customised to suit the size of the school. The units eliminate the need for fixed libraries, as the handcart can be pushed from one classroom to the next. Schools that are unable to pay upfront can arrange a payment plan. The team installs a solar panel on the roof of each school, and energy from the panel is stored in a battery and used to charge all devices.

Education

Electronics

Africa Prize awardees are at the forefront of transformative electronics innovations, from a logistics app optimising emergency response, to a smart glove translating sign language in real time. With advances in facial recognition, smart meters and online platforms, these innovators are enhancing efficiency, connectivity, and security across the continent.

KAOSHI

Chukwunonso Arinze and Princess Oti, Nigeria, 2019 finalist

KAOSHI is a mobile app that connects money senders across the globe. The app facilitates a peer-to-peer money swap, circumventing the need to literally send money across borders. The app tackles the high cost of transferring money to and between African countries, as well as the hassle of long queues at financial institutions or buying foreign currency on the black market. Instead, it allows users who want to send money in opposite directions to swap between themselves, which is cheaper and more convenient. KAOSHI connects users both within and outside of Africa, allowing each to specify the currencies they want to exchange and matching them to users making inverse exchanges.

TERAWORK

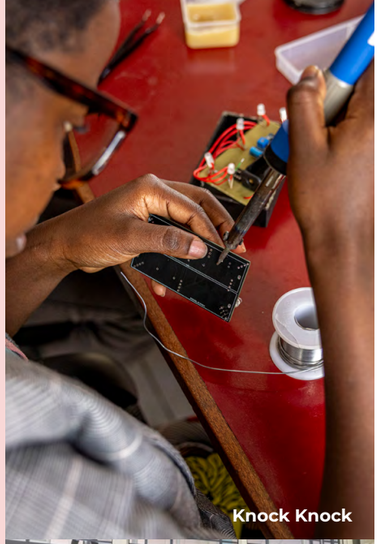
Femi Taiwo, Nigeria, 2022 One-to-Watch winner

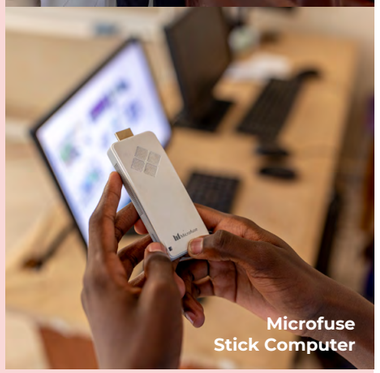
TERAWORK is a freelance platform that helps business owners safely outsource key skills as and when needed. TERAWORK's platform lets users commission, brief, manage and pay freelancers working in a variety of fields, from software development to accounting, marketing, writing, design and more. This allows businesses to hire part-time skills that are not part of their core service or product, giving the business financial flexibility when it's still growing. It also increases the field of available talent by allowing customers to work across large distances, an increasingly popular option as remote working becomes more accepted.

Beba-Beggie

Charles Oduk, Kenya, 2024 shortlist

Beba-Beggie is an IoT-based automated locker technology offering affordable, accessible, secure and convenient short-term storage. A version of the e-lockers is also available as a battery charging station for e-mobility motorbikes. The locally designed and fabricated metal e-lockers further offer a secure and accessible drop-off and pick-up facility for courier and parcel deliveries.





Knock Knock

Esther Mueni, Kenya, 2024 shortlist

Knock Knock is a domestic alert system for people who are deaf or hearing impaired. It uses a highly sensitive vibration sensor to detect physical knocks on a door and transmit this information to smartphones via Bluetooth. The cube-shaped device, measuring 5 centimetres by 5 centimetres, is fitted to a door and triggers two alerts when activated. The first alert is visual, using a multi-coloured LED lighting system to display attention-grabbing patterns. The second alert relies on a free mobile application, which triggers the user's phone to vibrate at unique patterns.

Chura

Samuel Njugana Wangui, Kenya, 2015 shortlist

In Kenya, most mobile phone users have at least two SIM cards to ensure signal strength across different carriers. Chura is a web-based, multi-network system that allows users to move airtime between their different SIMs regardless of carrier, buy airtime from service providers that can be used on any network, send airtime to family members or employees, or exchange airtime for cash.

Microfuse Stick Computer

Ivan Karugaba, Uganda, 2024 shortlist

The Microfuse Stick Computer is a compact and affordable device that plugs in to any screen, projector or monitor to transform it into a Wi-Fi-connected computer. It increases computer access and digital inclusivity for low-income households and schools. The small central processing unit, measuring 103 millimetres by 46 millimetres by 10 millimetres and weighing 120 grams, has internal storage of 16 gigabytes or 32 gigabytes. This can be further expanded with SD cards or hard disks. The stick has Bluetooth and wireless connectivity. Its robust and energy-efficient design makes it suitable for use in off-grid areas using renewable energy.

Kamata

Edmand Aijuka, Uganda, 2016 shortlist

Kamata, meaning 'to seize', is a prevention system that alerts regional utility centres when power is being tampered with or manipulated. Built into household power meters, it sends the location, meter number and type of interference. The utility centre can seize control, cut off the power and alert authorities and then remotely restore power after the incident is resolved. Kamata has launched two products to the market: the Kamata Smart Enclosure, a smart locking device controlled by mobile app, and the Kamata Smart Device, which is installed in the metering enclosure, provides 24-hour protection, and can immediately cut-off power if fraudulent activity is detected.

iMeter

Ifediora Emmanuel Ugochukwu, Nigeria, 2018 finalist

The Intelligent Meter (iMeter) and Advanced Metering Infrastructure (AMI) give consumers and power utilities control over how electricity is used. The smart meter measures energy usage and connects to smartphones or computers that have the AMI software on them. These applications enable consumers to manage their smart meters remotely. They can monitor power usage, set budgets, disconnect their meters, and make payments. For people with limited internet access, select services can be accessed through text.

Riziki Source

Fredrick Ouko, Kenya, 2017 shortlist

Riziki Source is a web platform that helps employers to tap into the millions of skilled people living with disabilities in Africa, of which up to 80% are without work. The Riziki Source app has gained traction and now has over 1500 active users. The training department has been on a positive trajectory, providing soft skills training to job-seeking disabled people. Over 2000 job seekers have benefited from this training, thus improving confidence of 100 employers in employing people with disabilities.

YUNGA

Anatoli Kirigwajjo, Uganda, 2023 winner

YUNGA is a local rescue network providing low-cost security by connecting neighbours to each other and with the police. The innovation is based on the ten household model, a traditional practice in Uganda, Kenya, Nigeria and Tanzania, where people use drums to alert their community to an emergency. Communities are divided into networks of 10 to 30 households, with each receiving a YUNGA device that is connected to a local network. A device is also given to police stations. In cases of break-ins or other emergencies, pressing a button sends a message to other devices and phones in the network with the victim's details and address, prompting a community response.

JuaKaliSmart

James Ochuka, Kenya, 2019 shortlist

JuaKaliSmart is an online marketplace for locally made products. It gives artisans and small workshop owners, who make items such as furniture, an opportunity to sell their products beyond their local community. JuaKaliSmart further supports these businesses by making deliveries across Kenya at affordable prices. Tools, machines and safety equipment are also available to artisans at an affordable price and with a flexible payment plan. Active workshops on the platform get enough orders to engage at least three artisans every week.

Sign-IO

Roy Allela, Kenya, 2019 finalist

Sign-IO combines a mobile app with smart gloves that track and translate sign language movements into speech in real time. The intelligent system was designed with young children in mind and is being developed with young users with hearing and speech impairments. Hardware embedded inside the glove reads the user's finger movements and compares these to an internal database based on American Sign Language. The mobile app then translates this to speech immediately, with users able to set the gender, pitch, tempo and delay of the voice that represents them.

Muzikol

Nges Njungle, Cameroon, 2018 shortlist

Muzikol is an online music marketing and social media application designed to meet all the career needs of musicians. Musicians can use the app to generate revenue by selling their music, merchandise, event tickets, and getting booked directly. They can find jobs through the app and interact with other musicians and their fans. Muzikol takes a percentage of all money paid through the app. Information gathered through the app is also provided to record labels at a fee. Today, Muzikol has become a central part of Cameroon's entertainment industry, hosting one of the largest music awards in the country.

BACE API

Charlette N'Guessan, Ghana/ Côte d'Ivoire, 2020 winner

BACE API remotely verifies users' identities for services such as banking and other industries that rely on identity verification. The software uses facial recognition and artificial intelligence, and can be integrated into existing apps and systems. BACE API can use live images or short, five-second videos taken on phone cameras to detect whether the image is of a real person, or a photo of an existing image. It then matches the picture or short video to either a pre-saved reference photo, or the person's government-issued identity documents. The process is quick, secure and efficient. The BACE API software uses a phone or computer's built-in camera and does not need special hardware.

SnooCODE RED

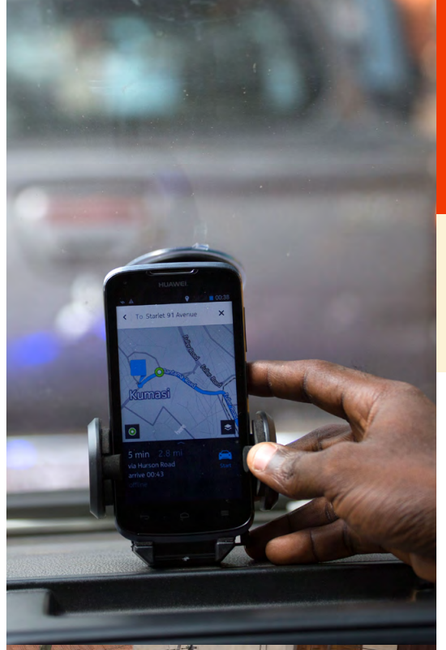
Sesinam Dagadu, Ghana, 2017 shortlist

In many low- and middle-income countries, patients can find it difficult to share their location with emergency services. Additionally, emergency services have no way to easily assess the capability of medical facilities before transporting patients. Both of these factors hamper timely access to emergency response services.

SnooCODE RED is an emergency care system for low- and middle-income countries. It significantly reduces emergency response times through a custom-made addressing system that works without the internet to help ambulances navigate dense urban areas as well as remote areas with unreliable connectivity. Using software originally developed to deliver parcels to areas without street addresses – our core technology, SnooCODE – SnooCODE RED reimagines how we understand the postal system, helping ambulances reach emergencies faster.

The system enables easy patient location sharing, even without a smartphone. It allows emergency responders to locate patients when they share details on devices such as smart watches. A pilot with the Ghana Ambulance Service demonstrated an over 50% reduction in response rate. Since then, the system has been updated with the locations of over 50,000 hospitals, ambulance stations, pharmacies and doctors across the African continent. SnooCODE is now partnering with Lay First Responders International for a pilot programme in Sierra Leone, and plans to incorporate patient triaging and AI capabilities into the system.

SnooCODE is currently Liberia's National Digital and Postal Addressing System, providing accurate digital addresses for every location in the country, which benefits approximately five million people. SnooCODE welcomes partnerships from emergency medicine organisations, ambulance services and all health organisations. It also wrapped up a project supported by the Embassy of Switzerland in Ghana, the Emergency Medicine Society of Ghana (EMSOG) and the French Development Agency (AFD) to integrate a module into SnooCODE RED that allows emergency control centre operators to see hospitals ranked according to their capacity and capability to handle each emergency, helping to save more lives.



Energy and power

Africa Prize awardees are driving transformative change in energy and power applications, addressing challenges such as unreliable power supply, inadequate electricity infrastructure, and food waste due to a lack of cold storage. Their innovations span solar-powered solutions, electric vehicles, and off-grid systems, promising to provide clean, reliable, and affordable energy across Africa.

GreenTower Microgrids

Andre Nel, South Africa, 2017 finalist

GreenTower Microgrids is a hybrid solar microgrid solution that uses 90% less energy than traditional methods to heat water, helping to solve electricity and water supply problems. It is designed to be scalable, and a single containerised unit typically serves 15 homes.

Remot

David Tusubira, Uganda, 2020 finalist

Remot is a hardware and software system that monitors and manages the performance, use and health of solar photovoltaic (PV) panel installations. The system gives solar companies more than just data about their customers' energy use – it also monitors battery health to give them more control over the lifespan of their installations and help prevent power outages. Remot also examines the system itself for inefficiencies and potential problems. Remot now runs on over a thousand off-grid installations including solar water pumps, cold storage facilities and maize mills. The solution also connects solar distributors to carbon financing, in addition to optimising operation and maintenance of off-grid assets.

Kukia

Divin Kouebatouka, the Republic of the Congo, 2022 shortlist

Kukia is an absorbent fibre used to clean up oil spills on both land and water and prevent oil leaks altogether. Made from the fast-growing and invasive water hyacinth plant, it can hold up to 17 times its weight in hydrocarbons, the compounds that form the basis of crude oil. Kukia can be used to suck up oil on the ground, draw in oil spilled on water, or temporarily plug an oil leak in a barrel or other container. Kukia is sold directly to petrochemical and pollution control companies, as well as to the public through fuel stations and wholesalers.

Kuza Freezer

Purity Gakuo, Kenya, 2024 shortlist

Kuza Freezer is a durable, low-cost, solar-powered fridge freezer made from recycled plastic waste. It can take up to three days to sell 30 kilograms of fresh fish. Without storage, traders are often forced to sell at discounted rates of $2 per kilogram. By ensuring the fish stays fresher for longer, they can sell fish for up to $5 per kilogram, more than doubling their income. “Kuza” means “to empower”. Kuza Freezer has a temperature range of -20 to 10°C and capacity of up to 150 litres.

BleagLee

Juveline Ngum, Cameroon, 2022 shortlist

BleagLee is a smart cooking system made from recycled materials. It includes a smokeless cook stove made of metal scraps, a clean cooking fuel made in solar-powered bio-digesters from plastic and agricultural waste, and an AI-based platform to identify open burning of complex waste streams. The team uses fungi to perform mycoremediation on site, which converts the waste into an organic form of clean energy. BleagLee also trains women to source scrap metal and make the stoves themselves. Customers have so far included households, cafeterias, schools and small restaurants. Bleaglee stoves are 80% cheaper than using firewood and cook food five times faster than traditional ovens used in Cameroon.

Second-Life Batteries

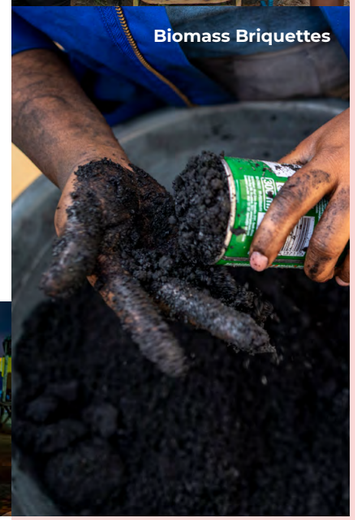
Léandre Berwa, Rwanda, 2024 shortlist

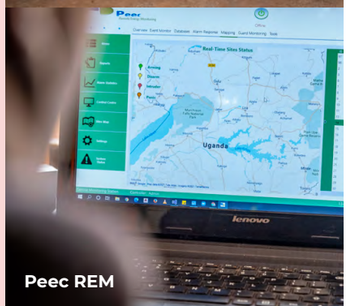
Second-Life Batteries (SLB) are packs of retired electric vehicle (EV) batteries that have been repurposed as a back-up power supply for telecom towers and mini electricity grids. By extending the usable life of the batteries, the innovation reduces electronic waste and the environmental impact of energy storage. Retired batteries are sourced from Enviroserve Rwanda Green Park, an electronic waste management company.

Biomass Briquettes

Ludo Ntshiwa, Botswana, 2024 shortlist

Biomass Briquettes is an environmentally friendly clean fuel that turns biowaste into a renewable energy source for heat production. It acts as a substitute for charcoal, but with little to no smoke emissions. The Biomass Briquette is three times denser than charcoal, at 970 kilograms per cubic metre, with a single briquette burning up to 30 minutes longer while producing a consistent supply of energy.





WAGA Power Pack

Gibson Kawago, Tanzania, 2023 finalist

WAGA Power Pack is made with recycled batteries bought from informal waste collectors, many of whom are women and young people. The old batteries are charged then tested after two to four weeks to check if they can still hold a charge equivalent to the manufacturer’s standard. If a battery’s voltage has dropped, or if it is corroded, it is sent for electrochemical recycling. Once assembled, the WAGA Power Pack is a set of lithium-ion battery packs with a strength of 12, 24 and 48 volts, suitable for different applications, such as powering lights, household appliances and heaters.

Smart Green Stove

Margaret Yainkain Mansaray, Sierra Leone, 2023 shortlist

Smart Green Stove is a non-electric cooking device designed to reduce the greenhouse gas emissions and health risks associated with cooking with wood-burning stoves. With a frame made from recycled metal, the stove burns green briquettes made from recycled local materials such as coconut and jelly shells which are usually discarded., which last longer than charcoal, reducing energy consumption. The inbuilt insulator absorbs most of the heat and makes the stove nearly smokeless, reducing the soot which would otherwise be released into the environment and inhaled by those cooking a meal. The device is portable, suitable for indoor and outdoor use, and comes with a two-year guarantee, after which the insulator needs replacing.

The MakSol Cooker

Paul Soddo, Uganda, 2024 shortlist

The MakSol Cooker is a low-cost solar induction oven and hob, which is designed for safe, zero-emissions indoor cooking by people in off-grid communities. For over 50% of Uganda’s population without access to the national electricity grid, the MakSol Cooker is a gateway to truly clean cooking. Women and girls will be the primary beneficiaries of this technology, as they often take principal responsibility for cooking in their households.

Peec REM

Philip Kyeswa, Uganda, 2022 shortlist

Peec REM is a remote monitoring and metering system for solar mini-grids that gives utilities control and oversight to manage installations and power use. Peec REM transmits real-time data, and in the case of emergencies, a utility operator can respond immediately to blackouts or tampering. Meters are sold to mini-grid developers and operators who need to connect households to their installations and sell electricity to consumers in a secure and reliable way. Peec REM is then maintained by the team on a monthly subscription model.

Energy and power

ColdHubs

Nnaemeka Chidiebere Ikegwuonu, Nigeria, 2018 shortlist

ColdHubs are solar-powered, walk-in cold rooms that extend the shelf-life of perishable foods from two to 21 days. Each hub can store up to three tonnes of food arranged in 30-kilogram crates. They use natural refrigerants, which minimises the environmental impacts of cooling. The ColdHubs are installed at markets and farm co-operatives. Farmers and retailers can rent space and only pay per crate of food stored per day. Excess solar power is stored in batteries to ensure the hubs are kept cold at night and in bad weather. ColdHubs already has 287 customers using the five hubs that have been installed at different sites in Nigeria.

Tree_Sea.mals Micro-Grid

Tracy Kimathi, Kenya, 2020 shortlist

The Tree_Sea.mals Micro-Grid is an off-grid solar power solution for remote communities in the semi-arid rangelands of Kenya. Powered by solar photovoltaic panels and distributed through a simple pay-as-you go model, it provides smallholder farmers and peri-urban communities with much-needed electricity. Tree_Sea.mals Micro-Grid is part of BARIDI, a solar cold-storage solution provider focused on off-grid solar preservation within East Africa's meat and fish markets.

Standard Microgrid

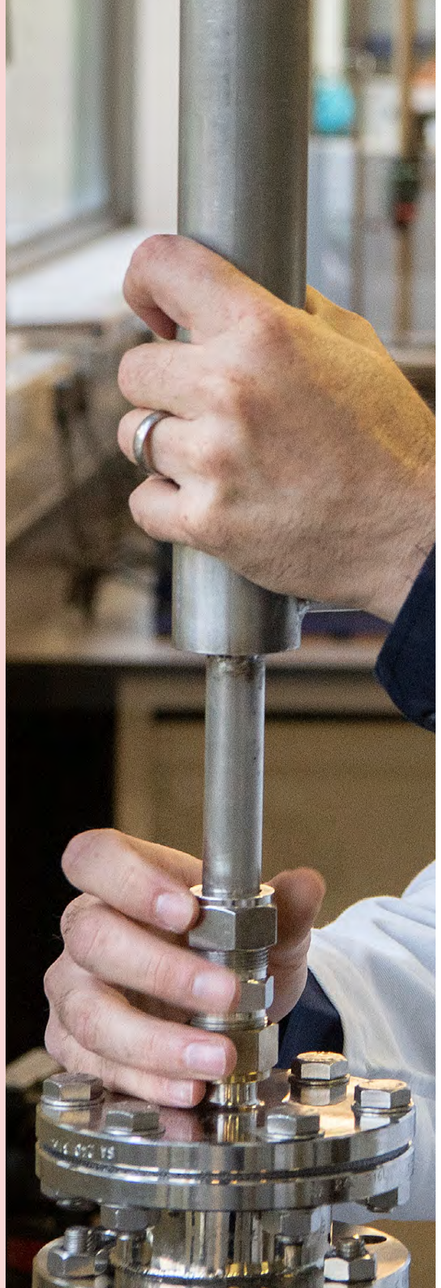
Matt Wainwright, South Africa, 2016 finalist

Standard Microgrid is a self-contained, community-managed renewable power grid that can be deployed anywhere at a standard cost. Rather than paying a utility company for electricity by the kilowatt unit, a local Microgrid manger is provided simple tools to manage the grid and distribute subscription credit to connected community members. Power generated is stored in batteries and supply and demand is balanced to ensure reliability and eliminate electricity waste. The system is low-maintenance and robust, making it ideal for rural African electrification.

SolarPocha

Oluwatobi Oyinlola, Nigeria, 2022 shortlist

SolarPocha is a solar-powered outdoor workstation where students and professionals can connect to both electricity and the internet and work comfortably outdoors. The workstation can be installed anywhere, giving people a safe place to work without needing to be near grid electricity or internet connections. The SolarPocha can accommodate up to eight people, including wheelchair users. It also has an online booking system so that users can reserve a spot at the table for as long as they need. Maintenance on the system is minimal, and internet data can be bought in bulk, with both funded by the booking fee paid by users.



HYENA POWER POD

Dr Jack Fletcher, South Africa, 2022 finalist

HYENA's POWER POD is a diesel generator replacement technology that produces on-site, on-demand and reliable electricity. Dr Jack Fletcher and the HYENA team developed the POWER POD technology as a way to deploy fuel cell technology into Africa, where hydrogen distribution is all but non-existent.

Liquid petroleum gas (LPG) is an ideal source of energy because its uses as a fuel for cooking and heating are already widespread. By using existing LPG infrastructure, HYENA makes localised power generation in remote locations a reality. The POWER POD generates the necessary hydrogen from LPG and water, and then converts it into electricity.

While methanol and ammonia could also be used, these present the same challenge as hydrogen – there is no distribution infrastructure in Africa, making the barrier to entry very high.

HYENA's POWER POD is silent, generates no vibration or unhealthy particulates, and does not require frequent maintenance as there are no moving parts. The POWER POD is specifically designed to be simple to manufacture and easy to service. It uses exchangeable cartridges, much like the average printer, which can be swapped out when necessary.

The technology has many applications but is particularly well-suited to power remote mobile phone towers where operators aim to have their towers operational for more than 99.95% of the time. Fletcher and his team have demonstrated the technology and developed several prototypes at a small scale.

Since the Prize, the team have gone from engineering designs to building a full-scale POWER POD minimum viable product, which produces 5 kilowatts of electrical power. They have also acquired a technology development facility, suitable for specialised testing with gases such as LPG and hydrogen, and are hiring two more employees who will be dedicated to the further development of the POWER POD.

> **"We want to make fuel cells possible and practical in Africa, where these new hydrogen technologies often face obstacles not considered in [other] regions. The use of existing LPG infrastructure makes the POWER POD a real solution that we believe can be truly transformative."**

Reeddi

Olugbenga Olufemi Olubanjo, Nigeria, 2021 shortlist

Reeddi is an energy system used to provide clean, reliable and affordable electricity to households and businesses in energy-poor communities. The energy system consists of a brick-sized lithium-ion battery capsule, which stores electricity provided to users; energy crates, which are used to store the energy capsules when distributing or collecting them for recharging; and the recharging station. Reeddi capsules are improved by a proprietary battery optimisation algorithm to extend the lifespan of the capsule from two to four years. Currently, Reeddi serves more than 5,000 households and businesses each month, with customers saving over 40% of their usual energy expenses with access to power anywhere, anytime

CIST Ethanol Fuel

Richard Arwa, Kenya, 2020 shortlist

CIST Ethanol Fuel is a clean cooking ethanol made from invasive water hyacinth. As water hyacinth contains strong cellulose bonds, the team manufactures an enzyme that breaks these bonds through fermentation, producing up to 1,500 litres of bioethanol fuel per day. CIST Ethanol releases minimal emissions when burnt, making it safe for cooking, and is nearly 40% cheaper than kerosene. It is sold to entrepreneurs in refugee camps, who can resell it to make an income. To address the growing demand for ethanol as a transport fuel, the team have also produced anhydrous ethanol fuel, which is stabilised and blended with petrol for use.

The Kitchen Box

Tunde Adeyemi, Nigeria, 2024 shortlist

The Kitchen Box and Bio-Tank is an affordable biogas digester, which turns any type of organic waste into animal feed and organic fertiliser, generating clean energy for heating and cooking. It was created to help rural women and girls, who are often responsible for cooking and whose health is negatively affected by emissions from inefficient stoves burning wood, charcoal or kerosene. The innovation operates with 3 indigenous African languages. It reduces energy costs while providing over 30 extra functionalities for clean cooking, off-grid electrification, and animal feed supplements.

Manufacturing and mechanical

Africa Prize awardees are developing cutting-edge solutions to address challenges such as waste collection, pollution, and deforestation. Whether automating recycling processes, providing affordable mechanisation to farmers, or creating environmentally friendly construction materials, these engineers are reshaping manufacturing with a focus on sustainability and efficiency.

Biopackaging

Armelle Sidje, Cameroon, 2021 shortlist

Biopackaging transforms banana and plantain stems into biodegradable paper packaging products, reducing both deforestation and plastic waste. The process involves unsheathing the plantain and banana stems, extracting the fibres, and boiling to remove lignite. A paper pulp made from the cellulose that remains is then dried in the sun, from which Biopackaging is made, fit for purpose for retail applications. Biopackaging is also developing an online platform to connect eco-friendly packaging customers with sellers across Africa.

Garbage In, Value Out

Victor Boyle-Komolafe, Nigeria, 2020 shortlist

Garbage In, Value Out (GIVO) is a system that automates and digitises collecting, processing and selling recyclable materials. GIVO is used by communities, governments or waste management entrepreneurs who want to host a waste collection centre. Once registered as a GIVO collection point, waste collectors bring the plastic they have collected to that centre, where they have a profile on the GIVO app. The app tracks how much they have collected, what it is worth, and when they last dropped off plastic.

The Green Rock Drill

Lawrence Ojok, Tanzania, 2017 shortlist

The Green Rock Drill is a solar-powered alternative to modern fossil fuel-powered rock drills. It helps small-scale artisanal miners bridge the gap between hard manual labour and expensive mechanised equipment. It also reduces air pollution in tanzanite mines, improving miners' health and making mining more environmentally friendly.

Waste-to-Wealth Enhancer

Cletus Ekpoh, Nigeria, 2023 shortlist

Waste-to-Wealth Enhancer (WWE) is a four-part recycling system created to address illegal dumping of rubbish, unregulated landfills and open burning of plastic. It aims to reduce pollution, contamination and environmental degradation.

The system was created by Nigerian polymer engineer Cletus Ekpoh, who makes his compact and portable recycling machines from locally sourced metals.

The first unit, an agglomerating machine, uses self-generated heat to convert polythene plastic, such as discarded water sachets, into a solid form before cooling the mass with water and cutting it into pellets with rotating blades in a vertical drum. This prevents the polythene going to landfill or oceans, and the pellets can be upcycled to make new plastic film, nylon agricultural bags and many other recycled products.

The second component is a crushing machine for solid plastic waste such as buckets, chairs, battery casing, kegs and bottles. Its crushing chamber is a horizontal drum with blades that break hard plastics into 2 to 8 millimetre flakes, which drop through holes in the bottom of the cylinder. The flakes are then used to make new plastic products including paint buckets, interlocking moulds, and clothes hangers.

The third unit is an extrusion machine that makes a roll of plastic film from the pellets produced in the first unit. The material is poured into a barrel containing an extrusion screw shaft, heated to a molten form and then blown into a thin film by an air compressor. The film is passed through rollers which compress it into a 2-ply sheet of polythene for cutting into shopping bags and agricultural bags, such as those used to carry compost.

The fourth element of the Waste-to-Wealth Enhancer is a manual compressor which crushes an aluminium can to 10% of its original size, making it easier to store and transport to turn into casting of ingots, moulds, clamps, and more.

The four portable machines are designed for use at dump sites by waste pickers who can efficiently process waste into valuable recycled material for secondary production in the circular economy.

“Job creation and financial empowerment is our first goal. Our machines can be operated by a layperson, who can turn the process of recycling into a regular income source. We also want to ensure that Africa buys into this idea to address the serious environmental threat posed by unregulated waste disposal and inadequate recycling.”

Hybrid five-axis machine tool

Multi-Purpose Earth Brick Machine

Eco Tiles

Eco Tiles

Hybrid five-axis machine tool

Dr Lukas du Plessis, South Africa, 2019 shortlist

The hybrid and reconfigurable machine tool works on five axes to allow users to cut and grind metals and hard materials at unparalleled speeds with precision. This means it not only moves in the X, Y and Z axis, but can also rotate on two additional axes, to approach machining from any direction. Five-axis machine tools do exist, but they are typically inaccessible for most African artisans due to cost, lack of infrastructure and intense training needs. The versatility of 5-axis machine tools is crucial in today’s competitive manufacturing world. Du Plessis’ unique system is based on proven technology, can be deployed almost anywhere, can be remotely programmed and monitored, and is available at an affordable price.

Multi-Purpose Earth Brick Machine

Fikru Gebre Dikumbab, Ethiopia, 2023 shortlist

The Multi-Purpose Earth Brick Machine is a manually operated portable machine to make interlocking compressed earth bricks for more cost-effective and environmentally friendly construction. Bricks are composed of 90 to 95% soil mixed with 5 to 10% cement and water. A team of three to four people can make up to 500 bricks per day, making enough for an average Ethiopian home in nine days. Structures made from compressed earth bricks require the same level of maintenance as ordinary bricks but use far less concrete and no mortar. The brick mould can be easily replaced to make paving, or briquettes from charcoal dust, wood chips, water and biomass.

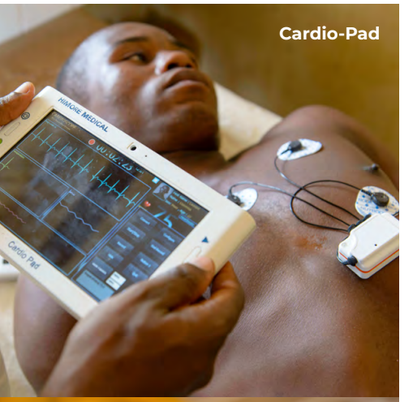
Eco Tiles

Kevin Maina, Kenya, 2024 shortlist

Eco Tiles is an environmentally friendly roofing material made from recycled plastic. Stronger and lighter than clay or concrete tiles, the innovation is a dual solution to plastic pollution and high building costs. Conventional tiles are marginally cheaper but prone to breakage during transport and installation. Eco Tiles have a higher tensile strength and are lighter, at 2.5 kilograms per tile compared to 5 kilograms for clay and concrete tiles. This lower weight reduces the amount of timber needed on a roof and take less time to install. Eco Tiles can save up to 30% in the cumulative costs of construction.

Medical and health

Africa Prize awardees are pioneering solutions to address critical challenges in the medical sector. From a quick malaria test device to foldable photo-therapy cribs for newborns with jaundice, their innovations bridge healthcare gaps, improve diagnostic efficiency, enhance patient care, and ensure access to quality healthcare in remote areas.



Cardio-Pad

Arthur Zang, Cameroon, 2016 winner

The Cardio-Pad is a medical tablet that allows any medical professional to conduct heart examinations quickly and without expensive equipment. The Cardio-Pad produces a digitised electrocardiogram (ECG) to assess heart conditions and a patient's heartbeat. Results are sent by a mobile phone network to a cardiologist, who can interpret the data and send their diagnosis and instructions back to the local doctor or nurse within 20 minutes.

Orbit Health

Pazion Cherinet, Ethiopia, 2021 shortlist

Orbit Health is a digital health platform that manages and stores patient data, including appointments, diagnoses, tests, doctors' notes, and prescriptions. By providing healthcare facilities with constantly updated, always available virtual copies of patient data, Orbit Health enhances the continuity of care provided to patients. Systems are customised to the needs of each healthcare provider, in contrast to generic systems that don't cater for the nuances of different health services. The fully interoperable platform combines different workflows, including wards, operating rooms, laboratory and imaging tests, and dispensaries, into a single report. This means that the loss of patient records is completely avoided.

Matibabu

Brian Gitta, Uganda, 2018 winner

Matibabu is a device that tests for malaria quickly, accurately and without having to draw blood. Matibabu, which means 'medical centre' in Swahili, is a low-cost, reusable device that clips onto the user's finger. Without requiring any expertise to operate, the results are shown within one minute on a mobile phone that's linked to the device. Matibabu uses red light to detect changes in the shape, colour and concentration of red blood cells, all of which are affected by malaria.

Chanjoplus

Collince Oluoch, Kenya, 2019 shortlist

Chanjoplus is an online system that helps parents and healthcare workers track vaccines, ensuring children get access to life-saving medicine. Chanjoplus is built to be integrated into Kenya's national healthcare system, and was created following extensive research with nurses and volunteers who dispense vaccines and parents.

MEDBOX

Emmanuel Ofori Devi, Ghana, 2023 shortlist

MEDBOX is a healthcare-monitoring system that records a patient's vital signs and immediately transmits them to healthcare professionals who can then provide remote medical advice. MEDBOX aims to reduce the amount of time and money that chronically ill people spend travelling to receive medical attention or to collect their pharmaceuticals, as they can use the device at home. To date, 23 pharmacies and three clinics use MEDBOX. The team's current priority is enhancing the rapid diagnosis feature that allows pharmacies to efficiently manage rapid test kits through a user-friendly software interface.

Genesis Care

Catherine Wanjoya, Kenya, 2022 Shortlist

Genesis Care is a system enabled by the Internet of Things (IoT) to dispense and dispose of feminine hygiene products, giving women and girls better access to affordable menstrual products. Dispensers are either coin or mobile-money operated, and users can buy a single pad at a time at less than a 10th of the cost of alternative products. Used products are safely disposed through an incinerator. The system is installed in public washrooms, schools, corporate facilities, factories, and hospitals. During the COVID-19 pandemic, incinerators were adapted to safely dispose of personal protective equipment (PPE) and are now used to incinerate all medical waste at small hospitals. Genesis Care is also developing fully biodegradable sanitary pads made locally from agricultural waste.

Sixth Sense

Brian Mwiti Mwenda, Kenya, 2018 shortlist

The Sixth Sense uses technology inspired by bats and dolphins to help people with visual impairments people 'see' what is in front of them. Like animals with poor eyesight who use echolocation to detect obstacles, the Sixth Sense is a small, handheld device that uses ultrasonic sensors. The device vibrates in different ways to warn the user when they are close to an object. The frequency of the vibrations increase as the user gets closer to an object. Users can also notify someone when they are in distress by pushing a button that sends a text with their location to a pre-set contact.

Pelebox

Neo Hutiri, South Africa, 2019 winner

Pelebox is a smart locker system designed for public healthcare facilities to dispense chronic medicine to regular patients, cutting down on long queues and easing pressure on clinic resources.

Access to medicine is a global health issue; one of the biggest challenges is convenience. In African countries south of the Sahara, the burden of repeat prescriptions on health resources is growing – clinics are often under-staffed and under resourced, but diagnoses of non-communicable and chronic diseases are on the rise.

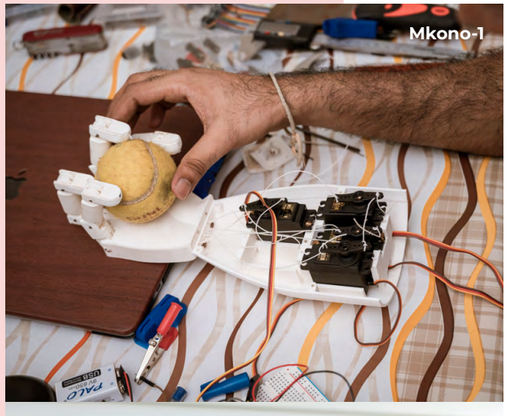
The collection of prescriptions often takes hours out of a patient's day and is compounded by the costs of transportation as well as lost wages. This further exacerbates the impact of illness on the patient's daily life. But with most of Africa's population relying on the public healthcare system, these delays are inevitable. In fact, up to 70% of a facility's daily prescription tasks is devoted to serving repeat prescriptions. Improving patient access to medication needs to be addressed to better direct public health.

Pelebox is a self-service smart locker system designed to ease pressure on public healthcare facilities by distributing medicine to regular patients. It was developed by Neo Hutiri, who was diagnosed with a chronic illness himself, stimulating his interest in the issues with repeat prescription access. With Pelebox, patients can collect their prescriptions quickly by entering their personal phone number and a one-time pin to unlock a locker, where their prepackaged medications have been loaded ahead of time.

At the same time, Pelebox is easing pressure for clinic resources, helping them monitor medication through a digital system. In a country where the average time spent in a queue to receive chronic medicine is three hours, Pelebox has enabled patients to receive their medication within 30 seconds.

Today, Pelebox can be found in over 70 communities across southern Africa. It reaches more than 56,000 patients every month and has supported over 250,000 individual patients to date. In response to the COVID-19 pandemic, Pelebox worked with the Royal Academy of Engineering's ProjectCARE (COVID-19 African Rapid Entrepreneurs) to increase orders in support of healthcare facilities.

"The Africa Prize network has been a safe space to work with high calibre people across the continent. As innovators, we carry a lot on our shoulders, and being able to sense-check something with similar people is ridiculously valuable. Everyone is incredibly supportive – we're always helping the network access our achievements or share opportunities we haven't been able to pursue. Together, we can dream a lot bigger, beyond what we can each do alone."



Mkono-1

Dr Atish Shah, Tanzania, 2021 shortlist

Mkono-1 is a locally developed, 3D-printed functional prosthetic hand that gives Tanzanian amputees an affordable solution for improved mobility and independence. Mkono-1 is the first locally designed and manufactured myoelectric hand in Tanzania. The technology amplifies the electrical impulses of the amputated limb's muscle tissue, and these signals are processed to allow the user to move the hand. The business also manufacturers 3D-printed orthotic devices, such as insoles for foot deformities and 3D-printed arm and leg casts for fractures, tendinitis, stroke, and arthritis.

FlexiGyn

Edmund Wessels, South Africa, 2023 winner

FlexiGyn is a portable device to allow gynaecologists to diagnose and treat uterine health issues without the need for anaesthetic. It can be used in the field and will improve women's access to quality healthcare in remote areas without medical infrastructure. Typical hysteroscopy systems used to examine the uterus are rigid, leading to high patient discomfort, and they require bulky additional equipment for visualisation. The FlexiGyn system has a built-in light and camera on a small diameter flexible scope that can bend in multiple directions. A display screen gives the medical operator a live view of the uterus. It enables accurate navigation through a patient's anatomy for pinpoint diagnosis.

TelMi

Fabrice Tueche, Cameroon, 2022 shortlist

TelMi is a set of devices that helps nurses monitor patients, respond to alarms and collect data, to improve their response time and workflow. The patient's device lets them alert medical staff of any problems with the push of a button. When there is an emergency, the nurse's corresponding device emits visual, vibration or audible alarms. TelMi uses rechargeable batteries that can last more than a month. While the patient device only transmits for a few metres, repeater nodes extend this up to hundreds more, making it possible to reach their nurse practitioner anywhere in the facility.

A-Lite Vein Locator

Dr Julius Mubiru, Uganda, 2022 shortlist

The A-Lite Vein Locator helps doctors and nurses locate a child's veins easier. The device was developed after seeing how difficult it is for medical staff to perform cannulations on young children, especially those with darker skin. Red light emitted by the device is absorbed by deoxy-haemoglobin – haemoglobin without oxygen. This casts a shadow of lines on the skin and visibly maps out the network of veins, helping medical staff draw blood or insert intravenous drips far more easily.

Make3D Medical

Juka Darboe, The Gambia, 2021 finalist

Make3D Medical uses 3D printing to create customised orthopaedic equipment for medical institutions and their patients. The company designs and produces cost-effective medical equipment to treat fractures, such as braces, splints, connectors, and spare parts for medical devices. Today, Make3D has expanded its services to neighbouring Senegal where it provides capacity building and product development services. It has also been focusing on providing access to 3D printing in medical, educational and general manufacturing sectors, while its main service portfolio is adjusting the procedures and standards to specific West African needs.

Sanitation Africa

Samuel Malinga, Uganda, 2015 shortlist

People living in Kampala rely heavily on traditional pit latrines in the absence of flushing toilets. Latrines are easily flooded, increasing the risk of diarrheal disease. Sanitation Africa represents a series of innovative sanitation technologies focused on improving urban sanitation. Appropriate technologies are used to improve pit latrines, to provide an efficient emptying service, to transport and treat faecal sludge, and to re-use treated sludge.

MamaOpe

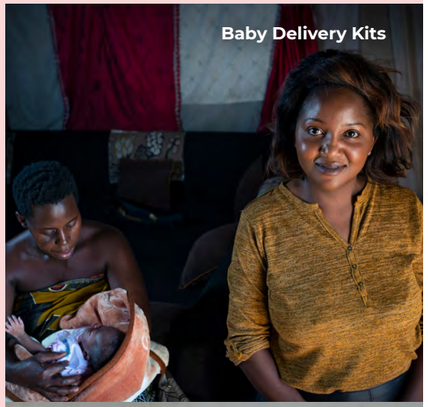
Brian Turyabagye, Uganda, 2017 shortlist

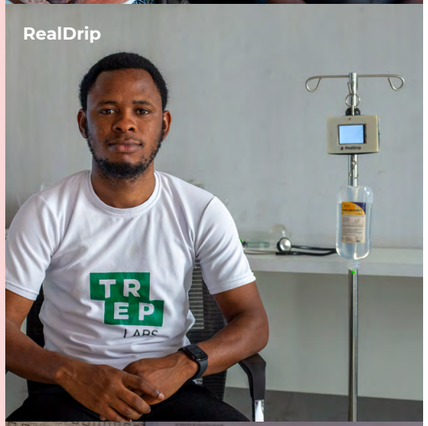
MamaOpe is a non-evasive pneumonia screening device that automates the process of monitoring lung infections in children (such as pneumonia and asthma) during auscultation. This complements the assessment skills of clinicians to accurately measure the vital signs, enabling them to diagnose more patients in a more accurate way at a lower cost. The MamaOpe's prototype accuracy in detection of pneumonia vital signs was evaluated in clinical usability and feasibility evaluation studies in western Uganda. The team is now finalising the ISO regulatory requirements for quality management ahead of the regulatory clearance for the local and global markets.


A-Lite Vein Locator


Make3D Medical


MamaOpe


Baby Delivery Kits


RealDrip


Crib A'Glow

Baby Delivery Kits

Muzalema Mwanza, Zambia, 2019 Shortlist

The Baby Delivery Kit is a simple but well researched set of tools for midwives in Zambia delivering babies in under-resourced clinics or at home births. The kit includes basic items like a scalpel, sanitary pads, a hygienic sheet, and cotton swabs – a list often given to prospective mothers to provide themselves when they arrive at hospitals to give birth. Today, thousands of kits are sold directly to prospective mothers and midwives every month in an effort to reduce infections among newborns. The company also provides training to birth attendants to better understand the health of pregnant women in the communities that they serve.

RealDrip

Taofeek Olalekan, Nigeria, 2021 shortlist

RealDrip is a medical device that simplifies essential intravenous therapy, used especially for pregnant women during drip and blood transfusions. RealDrip improves access to precise and smart infusion at a 96% price reduction compared to commercially available solutions. Where traditional infusion pumps require constant manual input and attention, RealDrip updates healthcare professionals remotely via web services and alerts. Using artificial intelligence to monitor dosages, flow rates and intake time, healthcare professionals no longer need to monitor patients' infusions manually. The system also stores each patient's medical status, allowing medical practitioners to quickly calculate correct infusion drip rates.

Crib A'Glow

Virtue Oboro, Nigeria, 2022 finalist

Crib A'Glow is a foldable, photo-therapy crib that treats and monitors jaundiced newborns. Virtue Oboro and her husband began work on the idea after their son was severely jaundiced after birth. Crib A'Glow can run on either grid or solar power, uses LED lights and actively monitors the level of bilirubin – the yellowish pigment that causes jaundice when it builds up – in the baby's body. It is completely mobile, and a tenth of the cost of the average phototherapy device used in high-income countries. To maximise on energy efficiency, light rays are focused on the baby's body instead of spreading out over the crib.

VacciBox

Norah Magero, Kenya, 2022 winner

VacciBox is a small, mobile, solar-powered fridge that safely stores and transports temperature-sensitive medicines, such as vaccines, for use in field vaccinations and in off-grid hospitals.

Mechanical engineer Norah Magero and her team developed the VacciBox to help get essential vaccines to communities where cold-chain infrastructure is lacking, to ensure patients don't miss the opportunity to be completely immunised.

Infrastructure and human resource challenges across Kenya continue to hamper vaccine distribution, with 3 in 10 children not adequately vaccinated. During the COVID-19 pandemic, the cold-chain challenges faced by healthcare practitioners and supply chains in distributing temperature-sensitive medicine was highlighted globally and remains a problem for many types of vaccines.

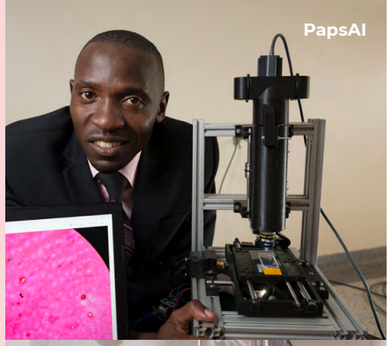
The VacciBox can also be used to transport blood and tissue. Magero and her team hope that VacciBox will help alleviate these issues by ensuring healthcare workers have a reliable means of transporting temperature-sensitive medicine wherever they need to go.

The 40 litre VacciBox is portable and lightweight. It can be wheeled or mounted on a bicycle, motorbike or boat, and has a telescopic handle for easy mobility. A built-in thermostat and digital thermometer maintain temperatures required for cold-chain medicines. To ensure power stability it has a battery supply, as well as mains and solar panel connectivity and a charge controller.

To further ensure reliability, the VacciBox can be monitored, and troubleshooting can be done remotely before deciding to send out a technician or recall the unit in case of failure. An application helps monitor distribution, stock and unit condition, so that healthcare networks can plan vaccination drives effectively.

Since participating in the Africa Prize, VacciBox has developed into a more robust solution. The current version can maintain cold storage for over 36 hours. The VacciBox Internet of Things solution is on its BETA version that incorporates more features such as stock management and product traceability from procurement to administration. To date, it has provided medical services to over 41,000 people including children, expectant mothers and displaced people. VacciBox has also moved into animal health through the support of new partners like Boehringer Ingelheim.

"VacciBox was designed with our local challenges in mind. It's versatile, reliable and localised. We're ensuring that it works the way healthcare workers need it to work for the conditions they face each day, so that they can save lives without worrying about technology."



PapsAI

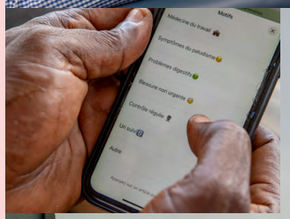
Dr William Wasswa, Uganda, 2020 finalist

PapsAI is a series of software and hardware innovations that make cervical cancer screening, diagnosis and patient record management faster and more efficient. A digital microscope slide scanner quickly scans high-resolution cervical cell images from pap smears. Healthcare practitioners can use an analysis tool to diagnose and classify the images. The tool has been published in peer-reviewed academic journals and had between 90% and 100% accuracy during testing. Software automatically assesses the likelihood of a patient contracting cervical cancer given their risk factors. Finally, a separate state-of-the-art digital oncology information management system is used as a one-stop-shop for cancer management.

ShiVent

Yusuf Bilesanmi, Nigeria, 2021 One-to-Watch winner

ShiVent is a low-cost, non-electric and non-invasive ventilator for patients with respiratory difficulties, available at a fraction of the cost of mechanical ventilators. Its simple design means it can be operated by unspecialised healthcare workers. ShiVent is designed for under-resourced clinics with unreliable electricity supply and limited access to specialist knowledge. Using the principles of Bubble CPAP (continuous positive airway pressure), the ShiVent blends air with a high-flow oxygen supply using a specifically designed Venturi air blender and delivers this to a patient still able to breathe by themselves. This is critical to the survival of patients experiencing respiratory distress.



La Ruche Health

Rory Assandey, Côte d'Ivoire, 2024 shortlist

La Ruche Health is a smart healthcare platform that provides communities in remote areas with easy access to healthcare support in the form of advice via text and voice. It offers direct access to vital healthcare information via WhatsApp, facilitates appointments to vetted medical practitioners, and digitises medical records for smooth patient onboarding. A generative artificial intelligence (AI) chatbot available via WhatsApp, Kiko, assists people seeking medical assistance and facilitates conversations with patients about their symptoms. The platform also includes an electronic medical records web portal for practitioners to efficiently perform patient onboarding. After interacting with Kiko, patients can book an appointment with a vetted healthcare provider in less than 30 seconds.

Software

In the software industry, Africa Prize alumni are at the forefront of transformative solutions, addressing challenges such as financial inclusivity, time-consuming recruitment processes, and service delivery efficiency. Innovations span from a Visa-backed card for the unbanked to digital health platforms ensuring seamless patient data management. Their work is fostering connectivity, efficiency and inclusivity across the continent.

CodeLn

Elohor Thomas, Nigeria, 2021 shortlist

CodeLn is an accessible learning tool, allowing novices and professional programmers alike to improve their coding skills, with special functions for those with additional needs, such as visually impaired and neurodiverse coders. The web-based platform streamlines the recruitment process from three months to two weeks, allowing companies to source, screen and interview potential candidates. A recruiter can post a job specification, immediately get matched with suitable candidates via CodeLn's recommendation system, test the coding skills of the candidate, and present them with an offer letter – all through one platform.

BlueAvo

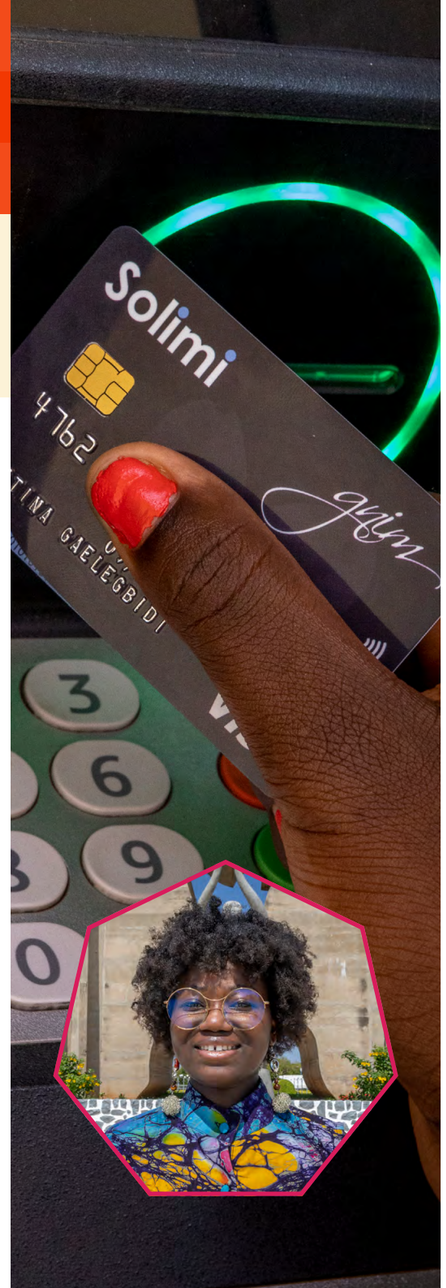
Indira Tsengiwe, South Africa, 2021 finalist

BlueAvo is a digital creative talent platform that allows brands, startups and individuals to connect with content creators across Africa. BlueAvo's vast creative network, online workspace and payment gateway allow African freelancers and creatives to work together unlike ever before, collaborating and trading across borders. International brands and agencies can employ diverse teams to ensure content is localised and relevant. The platform provides a web-based application to which recruiters can upload open briefs for content creators to respond to. BlueAvo's production platform also accounts for legal and intellectual property protection and includes a payment gateway.

Yo-Waste

Martin Tumusiime , Uganda, 2024 shortlist

Yo-Waste is a location-based mobile application that connects homes and businesses to independent agents for an efficient, on-demand rubbish collection and disposal service. This 'Uber for waste' app uses routing and scheduling algorithms to optimise waste collection routes, which reduces costs and improves efficiency. It has GPS location technology to pinpoint collection points, which overcomes the challenge of people not having official addresses in informal residential areas.



Solimi prepaid card

Gaël Matina Egbidi, Togo, 2022 finalist

The Solimi prepaid card is a Visa-backed card and account that does not require users to be customers of a specific bank. This significantly reduces the financial costs to give unbanked individuals more access to the digital economy. Software engineer Gaël Matina Egbidi and her team created the financial product in order to improve financial inclusivity.

Africa's financial inclusion problem is significant – at least 66% of the population are estimated to be unbanked. West Africa has the highest banking fees in the world, with fewer than 10% of Togolese people having a bank card. The lack of access to finances is problematic in several ways. In a region with small, isolated markets, minor changes in supply or demand can greatly impact households and small businesses that are not connected to the global economy. Without bank accounts, individuals struggle to access credit, or advance their careers beyond cash or mobile-money wages. Financial literacy, often overly technical and inaccessible, creates an additional barrier for unbanked communities to enter the global financial system and benefit from a large, connected market.

Solimi customers can buy the card even if they don't have a bank account, top it up it with money (cash, mobile money or through bank transfers), and make purchases both in-store and online. Because the card is supported by Visa, it gives customers who may not previously have even had a bank account access to the global economy, with purchases enabled anywhere ordinary Visa cards can be used.

The Solimi prepaid card also allows users to convert mobile money to cash that can then be used to pay for purchases online or even drawn our at a Visa-backed ATM. If a customer loses their card, they simply report it to Solimi to have it blocked, much like with an ordinary bank card. Cards can also be blocked via the Solimi mobile app.

Customers can have wages and salaries paid into the cards, send money to other Solimi customers or Visa cards, buy groceries, fuel, goods and more in stores or online, and draw cash.

Using artificial intelligence, Solimi will analyse customer behaviour, predict purchases, and help Egbidi and her team adapt their services to localised habits.

> **"We believe Solimi can have an enormous impact on both unbanked and low-income communities. By making financial inclusion far more affordable, as well as simpler and more versatile, we can walk together to a cashless world that works for everyone at every level of wealth."**

Jumeni Field Service Software

Eyram Amedzor, Ghana, 2021 Shortlist

Jumeni Field Service Software assists service-based businesses in the waste management sector by providing a three-part cloud-based application to help increase the productivity of their field teams, engage customers and collect payments seamlessly. It is divided into three applications. The back-office web app assigns job orders to field workers, tracks their progress and gains insights into general field performance. An agent app is used by the mobile workforce to update the team on assigned job orders, navigate between sites and write reports. A customer app is used to help businesses engage their customers and collect payments efficiently. USSD-based (unstructured supplementary service data used for sending short text messages) versions of the agent and customer apps make it accessible for users without the internet or smartphones.

Jumeni Field Service Software

Social Lender

Faith Adesemowo, Nigeria, 2021 finalist

Social Lender developed a platform that provides formal and informal financial services, which has impacted on the lives of more than 100,000 customers in Nigeria and South Africa. Social Lender partners with service providers like banks and microfinance institutions to offer access to financial services based on social reputation scores. In 10 minutes, its proprietary algorithm can perform a social audit of users based on their mobile, social media and other online activity, and assign them a social reputation score on a scale of 1 to 100. Most recently, Social Lender has launched its micro-insurance product targeted at low-income farmers and micro SMEs.

Social Lender

HoBeei

Mariam Eluma, Nigeria, 2022 shortlist

HoBeei is a freecycle platform where users earn a virtual currency, Buzzes, in exchange for used and unwanted items. Buzzes can then be used to bid on other goods listed on HoBeei, such as clothes, textbooks and cookware. Users earn Buzzes by uploading items of their own, inviting friends to the platform, sharing HoBeei on social media, or by purchasing bundles of Buzzes for cash. Users can also earn Buzzes by using the platform to make payments, and Buzzes earned from listing items can be used towards utility bills. The team collects all items to be uploaded from users directly and delivers new purchases to successful bidders.


HoBeei

Software

Transport and infrastructure

Africa Prize alumni are driving innovation in the transport and infrastructure sectors. From electric refrigerated cargo bikes to smart, sustainable homes, these engineers are addressing challenges such as surging fuel prices, access to affordable housing and environmental sustainability. They are accelerating the transition to renewable energy and environmentally friendly transport systems across the continent.


Revive Kit

Revive Kit

Chukwuemeka Eze, Nigeria, 2023 finalist

Revive Kit is an e-mobility service that converts gas-powered three-wheel motorbikes to run on batteries. Drivers using the electric motorbikes can save up to 60% in costs on gas or petrol. The electric mobility retrofit kit includes lithium-ion batteries, an AC induction motor, a retrofit shaft, and an electronic controller that acts as the inverter. The team studies the engines of different motorbikes and then develops specifications to adjust the gears and replace part of the engine with an electric motor. They then remove redundant parts, fix the battery to the bike's chassis and repaint the vehicle.


Kiri EV

Kiri EV

Christopher Maara, Kenya, 2024 shortlist

Kiri EV designs and assembles complete end-to-end affordable and clean energy mobility products and services across Kenya, including electric motorcycles, scooters, tuk-tuks and battery-charging infrastructure. Kiri EV also retrofits petrol-powered motorcycles converting them to fully electric vehicles.

Kiri EV was founded to address the mobility needs of Kenyans who currently rely on petrol-powered small vehicles. The aim is to provide them with a more cost-effective and environmentally friendly alternative. Kiri EV services include motorcycles equipped with removable and swappable rechargeable lithium-ion batteries, and a GPS device with accident detection and ambulance dispatch capabilities.


Kiri EV

Transport and infrastructure

Smart Havens Africa

Anne K Rweyora, Uganda, 2019 finalist

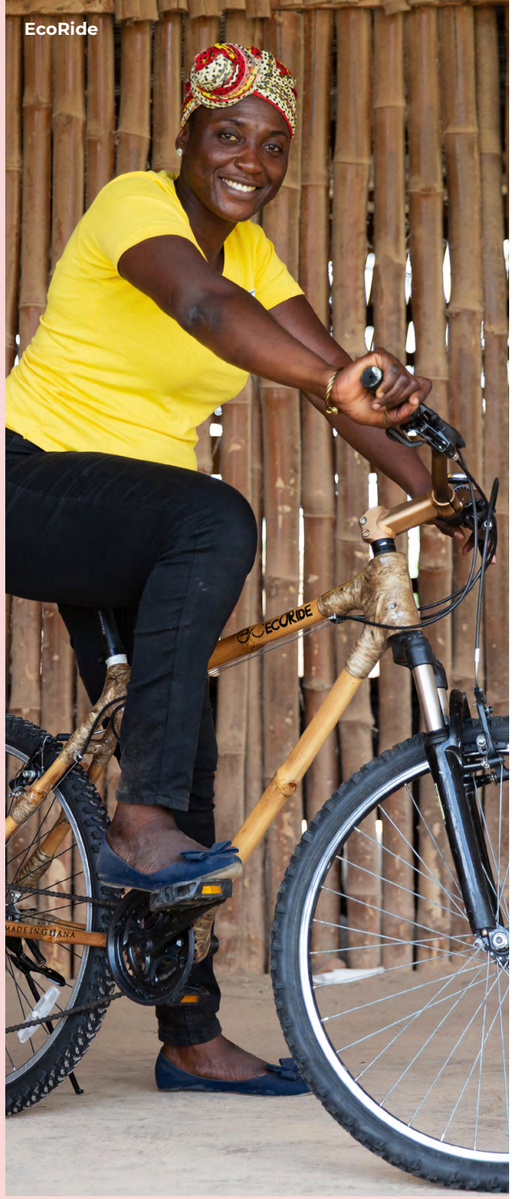
Smart Havens Africa are sustainable, smart homes built from appropriate but affordable technologies, geared towards making home ownership more accessible to African women. Technologies include locally designed brickmaking that uses less material; designs that reduce temperatures in the hot Ugandan climate; custom biodigesters; and solar water and electricity installations to keep utility costs down.

In Africa, only 13% of women are sole house owners, with three times more men owning homes outright. Anne Rweyora's goal is to deliver affordable homes that provide security, release low-income women from the rental trap, and allow them to enjoy stable lives, raise families, work or study, and have enough disposable income to live.

Smart Havens Africa builds houses in areas where homes are predominantly rented out by wealthier landlords. The company receives applications from prospective owners who will rent-to-own over a period of five years. Smart Havens Africa also provides employment and aims to empower communities. The team trains more artisans than needed, offering bricklaying and other training sessions for free to people in the area.

Today, Smart Havens Africa has created over 200 jobs for women, impacted over 400 lives through access to safe, affordable housing, saved over 4,050 African trees through sustainable brickmaking techniques, and transferred over $1.5 million in assets to women and low-income families.

"Job creation and financial empowerment is our first goal. Our machines can be operated by a layperson, who can turn the process of recycling into a regular income source. We also want to ensure that Africa buys into this idea to address the serious environmental threat posed by unregulated waste disposal and inadequate recycling."



Kuza Automotive

Alex Makalliwa, Kenya, 2017 shortlist

Kuza Automotive makes sustainable transport in Africa more accessible with electric tuk-tuks. Tuk-tuks are a popular means of transport in many African cities and Makalliwa's aim is to make them even more convenient, and reduce the impact on the environment by converting fleets to run on electric motors.

EcoRide

Bernice Dapaah, Ghana, 2020 shortlist

EcoRide bicycles are made from naturally occurring bamboo, sisal fibre and other sustainable parts. Bamboo is harvested, treated to remove its sugar content and air dried before the best pieces are selected and cut to size. These are glued and wrapped with epoxy and sisal fibres before the frame is sanded down, sprayed and fully assembled. Wheels, gears, brakes, and handlebars are mostly second-hand parts, refurbished by the EcoRide team. EcoRide plants 10 bamboo trees for every bamboo harvest, and now also produces reliable road and mountain bicycles.

SafeMotos

Peter Kariuki, Rwanda, 2018 shortlist

SafeMotos is a mobile app that connects commuters to the safest motorcycle (moto) drivers. Commuters use their smartphone to find the nearest moto driver, sharing their pick-up spot using the closest landmark where there aren't street names. Sensors on the drivers' smartphones monitor how well they drive, which gives commuters peace of mind. Drivers that fall below an acceptable level are removed from the app – encouraging them to adopt better driving behaviours. Commuters also rate their experience after each ride. Commuters pay for their rides by loading money onto their SafeMotos wallet using mobile money, credit card or cash.

The E-Con Wheelchair

Peter Mbira, Kenya, 2017 shortlist

The E-Con Wheelchair is a culmination of many solutions. This 4x4 wheelchair can go-off road, climb stairs, allow the user to stand upright and automatically navigate familiar terrain, all while keeping its passenger perfectly level. It can even keep medical records.


The E-Con Wheelchair

Auto-truck

Kenneth Guantai, Kenya, 2019 shortlist

Auto-truck is a self-charging electric hand cart that run on batteries powered by the excess energy produced by their wheels. A battery pack powers the hand cart, and when depleted, is swapped out with a second pack that has been charging at the same time. The depleted battery pack is then charged by movement, starting the cycle all over. It was developed by electrical vehicle manufacturing specialist, Auto-truck, whose services include assembling and manufacturing two, three, and four-wheeler and public transport EVs, along with rolling out franchised charging and service stations in East Africa.


Auto-truck

ThinkBikes CoolMAX

Tolulope Olukokun, Nigeria, 2023 One-to-Watch winner

ThinkBikes CoolMAX is an electric cargo bike with a fridge to help Nigeria's smallholder farmers get fresh food crops to market. The three-wheel vehicle and cooling unit is powered by separate removable packs of recycled lithium-ion batteries taken from old laptop computers for second-life usage. The electric bike has a top speed of 40 kilometres per hour and a range of 30 to 50 kilometres, depending on the weight of the cargo. The 2,000-litre fridge can operate for an hour from full charge and has a cooling range of -6˚C to 30˚C.


ThinkBikes CoolMAX

Water

Africa Prize awardees are addressing critical water challenges with transformative solutions. From efficient water purification technologies to innovative irrigation systems, they are reshaping water access and management across the continent. Their solutions, including a system that harvests moisture from the air and real-time water quality-monitoring systems, tackle issues such as water scarcity in rural communities, pollution and inefficient water distribution.


The Rainwater Harvesting App

The Rainwater Harvesting App

Aline Okello, Mozambique, 2017 shortlist

The Rainwater Harvesting App helps users navigate through complex rainwater harvesting solutions to find the equipment that suits their location, budget and needs. It allows users to calculate how much water they could harvest based on the type of roof they have, their location and available tank types in the area.


Smart Water Tech

Smart Water Tech

Allen Chafa, Zimbabwe, 2023 shortlist

Smart Water Tech is a real-time water-quality monitoring and control system designed to address poor water quality, which results in the spread of waterborne diseases. Sensors in the system monitor dissolved oxygen, pH levels, temperature, turbidity, hardness, and total dissolved solids. The resulting data determines whether an intervention is required. Smart Water Tech's software sends an SMS notification about deviation in water quality from standards set by the World Health Organization, enabling a rapid intervention.


Nanofilters

Nanofilters

Professor Askwar Hilonga, Tanzania, 2015 winner

Nanofilters is a low-cost water purification system, manufactured entirely in Tanzania. The Nanofilter integrates cutting-edge nanotechnology with sand-based water filtration to provide clean, safe drinking water. The process is affordable and sustainable and highly beneficial in rural settings across Africa where access to clean water remains a huge challenge. The system is custom built for each region and gives communities access to existing bodies of water that were previously too polluted to use.

Majik Water

Beth Koigi, Kenya, 2019 shortlist

Majik Water uses solar power to harvest moisture from the air and turn it into affordable, clean drinking water for off-grid communities. The all-in-one system harvests, stores and then dispenses water. Custom built water dispensers – or water 'ATMs' – allow communities to pay only for as much water as they need.

This initiative emerged after Beth and her teammates at a hackathon decided to channel their efforts towards addressing the pressing water needs of rural communities in arid and semi-arid regions of Kenya and beyond. Between 2016 and 2017, Kenya experienced one of the longest droughts the country has suffered, which saw most places face water rationing. At the same time, the City of Cape Town issued an emergency water plan, where 'day zero' would mark the day the city was forced to shut off taps to homes and businesses because reservoirs had reached perilously low levels.

Experimenting with different ways to absorb and then release water, the team conducted extensive research at several sites in Nairobi, while also installing its first commercial units in South Africa. Key to the approach is the deployment of atmospheric water generators, which operate through condensation processes and can produce up to 500 litres of clean water each day, offering a lifeline to communities facing water scarcity challenges. When coupled with solar energy, this integrated system holds the potential to significantly enhance access to clean drinking water within arid regions.

Majik Water has already made significant strides by implementing the innovative devices within communities, hospitals and schools, effectively increasing access to clean drinking water. The company has also partnered with corporations that want to improve their sustainable footprint, such as the AB-InBev Brewery in Johannesburg, South Africa. These efforts have yielded promising results, demonstrating the company's commitment to making a tangible impact on water accessibility in underserved areas.

"It is hard enough when you have water that is unsafe to drink and cannot afford a filter, but it is even harder when you do not to have enough water to filter at all. I started looking for other ways to solve water scarcity in Kenya."

Affordable AMD Solution

Affordable AMD Solution

Boitumelo Nkatlo, South Africa, 2023 shortlist

Affordable AMD Solution treats acid mine drainage (AMD), using industrial waste to recycle contaminated water for human consumption. AMD water is a byproduct of metal and coal mining, produced when sulphide minerals come into contact with air and water to form sulfuric acid and dissolved iron, which pollute rivers, lakes and water supplies. Affordable AMD Solution aims to convert up to two million litres of AMD to drinking water every day, which can be provided back to mines at a lower cost than water provided by municipalities. It can also be supplied to surrounding low-income communities.

Mobi-Water

Kelvin Gacheru, Kenya, 2017 finalist

Mobi-Water is a solar-powered system that allows the millions of people who use water tanks to ensure that water is not wasted. It monitors water levels, leaks, valves, and pumps via a mobile phone app, and also offers management and billing software. It uses smart sensors and meters to collect real-time data and analytics, allowing communities, businesses and utilities to efficiently monitor water availability, usage and ground water health. This innovative approach helps increase water access in vulnerable communities by up to 30%, while reducing water wastage and over-use by heavy consumers by 15%.

Aquaset

Obed Zar, Ghana, 2023 shortlist

Aquaset is a smart water-management system that allows households to manage their borehole and water tank levels, helping them to minimise water waste. Sensors measure the minimum and maximum water levels in the tank, which typically holds between 3,500 and 5,000 litres. When the water drops below a minimum level, the Aquaset sensors trigger the control unit to turn on a pump, but only if there is sufficient underground water in the borehole. Coloured LED lights show the water levels of the groundwater and the tank, and the control unit enables users to track monthly water consumption.

Eco Water Purifier

Timothy Kayondo, Uganda, 2020 shortlist

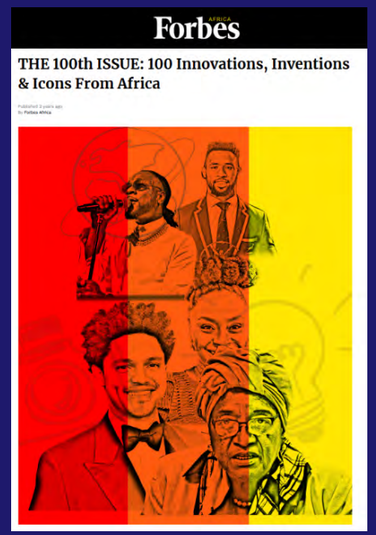
The Eco Water Purifier is a water filter made from animal bones, cassava peels, and other waste materials. To make the filter, waste is cleaned, fired in a vacuum-sealed furnace, soaked in an acidic solution, washed in distilled water, and then crushed into activated carbon. Water can be brought to the purifier from tanks or surface water by a solar pump, run through a sand filter, then the carbon filter, and finally through a UV light. The system fits into a portable box about the size of a large suitcase, which is easy to carry and secured against theft. An internal battery stores energy from the solar panel. The system can purify 300 litres of water an hour, which is ideal for rural schools and clinics.

Water

6

Africa Prize in the media

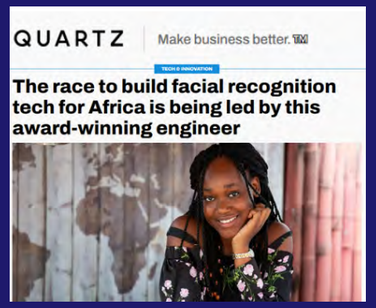
Coverage highlights

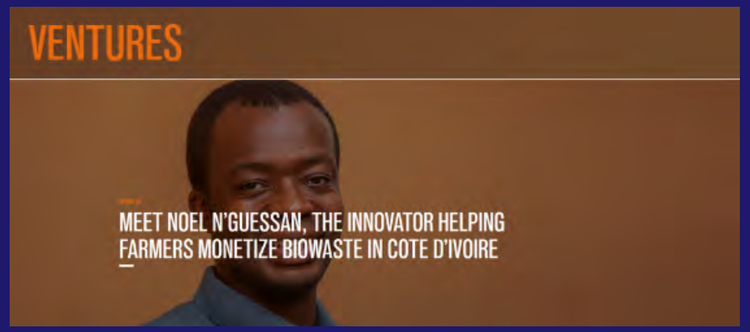


Juka Fatou Darboe, who was featured in She Awards Gambia as 'Women of the Week', says:

> **"The Royal Academy of Engineering did a lot of positive PR work from the beginning, from the photoshoot to releasing our profiles, just getting our business exposed. They had contacted a whole range of media houses in the Gambia. Media houses were then contacting me. Now when you google Gambian innovators, I come up."**

Coverage highlights





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Acknowledgements

The Africa Prize Judges

A valued network supports and works with the Academy to deliver the Africa Prize programme.

We take this opportunity to extend our gratitude to Academy Fellows, judges and reviewers, and in country organisations for their ongoing support. We would also like to express our appreciate the trainers, mentors and business experts for developing the skills, knowledge, and potential of Africa Prize awardees through their pivotal contributions.

The Africa Prize judges are an international panel with expertise in engineering, entrepreneurship, innovation and investment. The current panel consists of:

Malcolm Brinded CBE FRENG | 2014 to present

Malcolm is the Head Judge of the Africa Prize and Chair of the Africa Prize Steering Committee. He was formerly an Executive Director at Shell and UK Business Ambassador. He is a Fellow of the Royal Academy of Engineering and has been President of the Energy Institute, Chair of EngineeringUK and the Shell Foundation. He received a CBE in 2002.

Rebecca Enonchong FREng | 2017 to present

Rebecca is the Founder and CEO of AppsTech and I/O Spaces. She is Chair of ActivSpaces (African Center for Technology Innovation and Ventures), an incubator in Cameroon. She is a Co-Founder and board member of Cameroon Angels Network and African Business Angels Network. She also sits on the board of Venture Capital for Africa (VC4Africa), of Salesforce.org Foundation and the African Media Initiative.

Dr John Lazar CBE FRENG | 2016 to present

John is a software engineer and business leader focused on technology and entrepreneurship to generate positive impact. He is currently co-founder and general partner at Enza Capital, and Chair of the Raspberry Pi Foundation. He is a Fellow of the Royal Academy of Engineering. He received a CBE for services to engineering in 2016.

Dr Ibilola Amao | 2018 to present

Ibilola is the Principal Consultant of Lonadek Global Services, an Engineering Technology, Asset Performance and Information Technology Company. She is an honorary fellow of the Queen Mary University of London (QMUL). Ibilola supports STEM-focused catch-them-young initiatives to increase gender diversity in male-dominated sectors while nurturing future innovative leaders.

Dr Alessandra Buonfino | 2022 to present

Alessandra is a senior advisor at the Global Innovation Fund (GIF) and responsible for GIF's strategy on climate. Alessandra is an International Research Fellow at the University of Oxford's Saïd Business School; a trustee of the cross-party think tank Demos; and a member of the advisory council of Expectation State, a consultancy working with emerging states.

Sewu-Steve Taiwa | 2023 to present

Sewu-Steve is Managing Partner at Jaza Rift Ventures, a $50m venture capital fund backing digital health, medtech and biotech startups across Africa. With over 20 years of experience in impact investing and private equity in Europe and Africa, he has mentored over 250 startups and sits on various boards across Africa, the US and Europe.

We would like to give special thanks to all our past and guest judges, namely:

Ethel Cofie, Julius Court, Stephen Dawson OBE, Dr Kamau Gachigi, Salome Guchu, Maya Horgan Famodu, Mariéme Jamme, Professor Calestous Juma HonFREng FRS, Dr Moses Musaazi, Dr Bola Olabisi, and Emma Wade Smith.

Special thanks

Fellows and friends of the Academy, reviewers, mentors, panelists, trainers, and Academy staff who have supported the Prize since its inception.

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