

Three key start-ups from Africa's top science forum

March 13 2016, by Jennifer O'mahony



Senegalese President Macky Sall (L) delivers a speech in Dakar, during the opening of the "Next Einstein Forum" (NEF)

From disease-fighting drones to wristbands bearing health data for expectant mothers—African entrepreneurs pitched ideas to overhaul everything from healthcare to urban planning before an audience of industry figures at the first gathering of the Next Einstein Forum in Dakar, Senegal this week.

Here are three of the best:

DRONES TO FIGHT DISEASE

Moses Bangura, Sierra Leone

Bangura developed a civilian drone system to deliver medical supplies and transport clinical samples as part of his PhD in aerial robotics. He hopes to roll out the project first in his home country and then across hard-to-reach areas in Africa.

"It's very reliable and robust, an open source system which anyone can develop," he said.

"I thought about giving back to Sierra Leone and Africa, where I come from... one thing I realised is there is a very poor healthcare delivery system."

During the Ebola crisis, the first two hotspots were in the eastern towns of Kailahun and Kenema, linked by an extremely poor road that meant a distance of 100 kilometres (62 miles) could take a day's travel.

"In both Kailahun and Kenema, the greatest need was for more treatment facilities backed by greater and faster laboratory support," the World Health Organization said in a report during the outbreak.

"The cheapest and most efficient way would be to use civilian drones," Bangura told AFP, to ship [medical supplies](#), blood donations, and getting tests to mobile laboratories.

Bangura hopes his drones will take off within 18 months, subject to government legislation.

A WRISTBAND TO SAVE WOMEN'S LIVES

Cameroon's Arreytambe Tabot

Software engineer Tabot has already received seed money from the Nelson Mandela African Institute of Science and Technology for his team's smart wristband, which works with mobile technology to provide real-time care for expectant mothers.

Maternal sepsis is the third leading cause of maternal deaths in Africa, where more women die in childbirth than anywhere else, and Tabot says his invention is aimed at women in [rural areas](#) who are largely illiterate.

It "does not require any behavioural change on the part of the primary user," working without messaging or apps, which usually require some reading ability, Tabot said.

A combination of voice commands and Radio Frequency Identification technology, previously used to register voters in Nigeria, holds data on vital signs from regular check-ups on the device, tentatively priced at \$1.50.

"Every time she comes back to the local health centre the wristband is accessed and if there are any changes then that is registered again and synchronised back into the cloud," Tabot told AFP.

"These women are illiterate, a good number are in rural areas so they don't even know (sepsis) is a problem," he said, adding the wristbands will trial first in Nigeria.

Any problem or discomfort can be registered by the expectant mother with a health practitioner via a missed call.

BUILDING CITIES FROM PLASTIC WASTE

Moussa Thiam, Mali

Thiam is still studying for his PhD at Canada's University of Ottawa, but is already forming links with government agencies back home to sell his special brand of building material created from plastic waste.

With expertise also built up as an alumni of Senegal's African Institute for Mathematical Sciences (AIMS), Thiam wants to improve the environment in rapidly growing African cities while tackling pollution.

"Long-term I want to be in Mali and West Africa," he said.

Mixing the surplus plastic with gravel and sand in a special oven results in a product that could be used for interior design or even roads, offering a cheap and sustainable alternative to concrete, he said.

"We don't have (proper planning) in our urbanisation strategies," he told AFP. "Maybe we have the text, but when we come to the application we don't have enough.

"What we are trying to do is build some new, innovative material," he added.

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