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# THE HINDU

## Giving people's initiatives a voice

As countries around the world seek to accelerate the pace of development and pull people out of poverty, they must find solutions to many challenges: raising the capabilities of communities to enable economies to grow, handling environmental pollution, and ensuring equitable access to essential resources and services, and so on. On the other hand, communities and enterprising individuals often use their own ingenuity and labour to solve the problem, successfully finding some of the answers. Their ventures may be small, but the results are invariably effective.

Many of these rely on the zeal and personal conviction of their proponents. It is such inspiring stories, curated by *The Hindu*, that find a place in this special section marking Impact Journalism Day 2017.

There are several forward-looking examples of innovation and hope on these pages, narrated by journalists from a variety of international publications, and others. Acid attack survivors run a cafe in Agra; an innovative enterprise traps atmospheric soot to produce ink for art; old clothes are turned into ethanol in Japan; a pioneering group teaches women music in Afghanistan and launches a

girls' orchestra to revive faded cultural roots; the mornings from Asia helps women in Tunisia fight desertification, and solar power is tapped by more and more people both in rich and poor countries. Crowdsourcing of funds comes to the aid of desperate farmers, while one engineer in the Czech Republic has found a way to help the disabled drive cars, without difficulty. The focussed journalism here explores themes such as health, energy, pollution and women's empowerment, giving people and their efforts a voice.

It is important to note that such pioneering initiatives invariably find a resonance beyond local and national boundaries and ignite other bright ideas elsewhere. Some of them have already formed partnerships and created impact across different countries. They have used the power of the internet and social media to carry their message to millions around the world. *The Hindu* has a long tradition of fostering discussion on developmental and environmental issues, and providing a forum for elegant and effective solutions that advance human endeavour.

This IJD special produced in partnership with Sparknews reflects that commitment.



## Stories that change the world

Today, for Impact Journalism Day, 50 newspapers join forces to highlight stories that change the world.

Beyond the constant stream of negative news, there are many stories of hope and concrete solutions. Stories of changemakers tackling some of the world's most pressing issues with innovative ideas, in order to change the lives of millions for the better. Stories worth reading and spreading, not only to rebalance our view of the world, but to help these existing solutions be replicated worldwide.

The media can play a crucial role in telling the individual stories behind this global movement. That's why for the last five years Sparknews has invited newspapers to take part in Impact Journalism Day, harnessing the power of collaborative journalism to bring stories of change to the surface. Every year these newspapers explore and publish an array of groundbreaking solutions in special supplements on the same day, reaching 120 million people worldwide in print and digital media. Many publications have come to realise the impact of these articles, and now incorporate more solutions-driven stories into their day-to-day coverage of the world.

For the fifth edition of Impact Journalism Day, the media are joined by organisations that believe spreading these stories is a

first step toward change. These include the United Nations as well as One Young World, which annually gathers together 1,500 young leaders from social and corporate sectors who are involved in positive innovations. A large community of well-known personalities and ordinary citizens have also joined the chorus in signing a manifesto to show that everyone – governments, the private sector, civil society, NGOs and everyday people – can take action for a better future. You, too, can be part of this transformational movement.

Discover those who have successfully brought answers to challenges such as good health, access to water, quality education, climate change, and clean energy. Each serves as a concrete example of the power of individual or group initiatives to help reach the UN Sustainable Development Goals, to end poverty, protect the planet and ensure prosperity and good health for all.

We hope you enjoy the read...and that you become part of the solution. Sign the manifesto at [www.sparknews.org](http://www.sparknews.org) (or the hindu). *Christian De Boresdon, founder of Sparknews & Ashoka Fellow & The Sparknews Team.*

# Hanging out with the Sheroes

Acid attack survivors find hope and a livelihood in this Agra cafe which draws people from around the world

SIDHARTH ROY  
AGRA

The dimly lit cafe was stirring to life on a Monday morning as the traffic flow on the sleepy Fatehabad Road outside gradually picked up pace.

Sheroes Hangout is tucked away between some nondescript dhabas (eateries), across from a five star luxury hotel. In Agra, famous as the city of the Taj Mahal, the cafe is a well-known address. The decor of the restaurant is tastefully done and the walls are enlivened by colourful graffiti.

Sheroes is on the map for a unique reason: it is run by women who have survived acid attacks. At the start of the day, Bhupendra Singh, the cafe's operations manager, looks slightly annoyed as he gets the furniture set in place. But the mood transforms when lively Rupa (24) enters, swinging the glass door.

It is hard to believe that till a few years ago, Rupa avoided talking to people, hiding her face behind a dupatta. She did that so she would not have to expose her face, which was mutilated by corrosive acid thrown on her when she was just 15, allegedly by her stepmother and some men, while she was asleep. "It is those who attacked me who should hide their faces. Why should I," she asks.

### Spreading wings

Sheroes, which first opened in Agra in 2014, now has branches in Lucknow (Uttar Pradesh) and Udaipur (Rajasthan). The cafe was born out of the Stop Acid Attacks campaign, which was launched in 2013.

Alok Dixit, founder of the campaign, explains its genesis. "We started an online campaign to bring together



Visitors pose with acid attack survivors who served them at the Sheroes Hangout. \*SUDERSHAN

survivors of acid attacks, and more and more of them joined us. Most survivors are in the age group of 16 to 28 and are dependent on their families."

Unlike Rupa, though, 30-year-old Rukkaiya continues to cover her face when she is not at home or working at Sheroes. "I felt more confident after I joined Sheroes and met other survivors. They are like my family and even the guests treat us like normal people," she said.

Rukkaiya was just 14 when her sister's kin threw acid on her face, because she rejected a proposal for marriage. The Home Ministry said in Parliament on April 11, 2017 that 147 women suffered acid attacks in 2015. This is widely seen as an underestimate.

In 2016, a national law was passed under which an acid attack is recognised as a cause of disability, and victims have a right to financial support. Three years before that, specific legal provisions were added to the Indian Penal Code making an acid

attack punishable with a minimum of ten years in jail. The Supreme Court had also stepped in earlier, in 2015, and ordered curbs on over-the-counter sale of acid. The court asked the government to ensure that buyers are at least 18 years old, and provide a government photo ID to make a purchase. Yet, clandestine sale of acid continues, Stop Acid Attack campaigners say.

One of the regulars at Sheroes is Tanya Sharma (21), a civil service aspirant. "The food is really good and the hospitality is even better," she says. The manager says most patrons are foreign tourists. Sheroes offers North Indian and Continental food but the menu has no prices; guests can pay whatever they like. "We make a profit almost throughout the year but some months can be lean and we try crowd funding then to keep the cafe running," he said.

As lunch time approaches, a small bus arrives. A group of foreign tourists clamber down to have a meal. They are received by Madhu Kashyap (37), a survivor. She switches on a documentary on the cafe's television. It tells the guests the story of Sheroes. As the video ends, Suzanne, a Canadian visitor, wipes tears away. "I can't even imagine the horrible experience these women have gone through but it is empowering to see their strength," she says.

<https://www.facebook.com/SheroesHangout/>

# Inking carbon out of foul air

A start-up has produced ink from soot emitted by vehicles, making it possible to cut pollution and promote art

JACOB KOSHY  
NEW DELHI

Even air pollution can yield something positive, such as the beauty of art. When soot spewed by vehicular tailpipes is captured, it can be turned into art material. Which is what Graviky Labs, a Bengaluru-based start-up, is doing with one of the problems of the modern age: vehicular pollution.

For some years now, the company has been working on an innovative method to trap soot from vehicles and transform it into ink.

The team of industrial and automobile engineers, computer scientists and design enthusiasts developed a proprietary, retrofit device – called Kaalink – that can be attached to a vehicle's tail pipe to filter out residual soot. This is then chemically processed and turned into a purified carbon pigment that in turn becomes Air-Ink.

The unit captures 95% of particulate matter emanating from the engine without inducing back-pressure in the vehicle. Kaalink is currently undergoing certification and being tested in several pilot demonstrations. The unit is designed to work on Indian roads and fitted with heat and water proof electronics and materials.

Graviky's products turn the darkness of pollution into bold strokes. Their range currently includes marker pens with tips of various thickness, which respectively contain from 40 minutes up to 130 minutes of captured diesel car pollution. In the future, the 'art



Graviky Ink produced from particulate matter. \*GRAVIKY LABS

from pollution' series will include oil-based paints, fabric paints and outdoor paints.

Soot is mostly made up of fine black particles and carbon produced by incomplete combustion of fossil fuels. The particles are extremely tiny: 2.5 micrometres or less in diameter which is smaller than dust, and linked to public health: causing a variety of respiratory diseases, and even cancer.

The problem of fine particulates is growing. A Greenpeace report released earlier this year found that 90% of

Indian cities it studied had pollution levels over prescribed standards. Data for the year 2015 it analysed showed that 154 of 168 cities had an average Particulate Matter level higher than the national standard.

None of the cities had air quality matching the standard prescribed by the World Health Organization. Delhi was found to be the most polluted city, with the annual average for PM<sub>10</sub> being 268 micrograms per cubic metre, which is more than four times the 60 micrograms/cubic metre limit prescribed in the National Ambi-

ent Air Quality Standards of the Central Pollution Control Board. Anirudh Sharma, a co-founder, has said that he conceived Air Ink during a stint at the Massachusetts Institute of Technology - Media Lab.

At first, the idea was to build a hand-held printer that prints from candle soot, and Mr. Sharma demonstrated an early prototype at several conferences. "We thought what if we could use it as a pigment for colouring? We tied up with several designers, artists, chemists, and automobile experts to make this a reality.

Since then, we have made a significant effort to bring this concept to reality," he told *The Hindu* at the time.

### The funds chase

Currently the company is on a 'Kickstarter' campaign, which is a crowd-sourced operation that allows people to pledge a certain amount of money to support innovative services or products. "People from all over constantly ask us how they can get their hands on Air Ink and use it in their everyday lives. But at this time our pollution capture process is very labour intensive and can only hap-

pen on a very small scale. This campaign will allow us to scale up and make Air Ink more widely accessible," the company said.

Having filed for patents, it plans to expand beyond automobiles into collection of soot from different sources of pollution such as chimneys and generators.

Nikhil Kaushik, director at Graviky Labs and a chartered accountant by training, said the company would continue to be focused on ways to reach artists and convince them that they would be doing their bit for the environment by using soot-based ink. The other major effort is to tap large vehicles. "We are in talks with several large

Marker pens have been used up to 130 minutes of soot from diesel car exhaust

# Food for thought: selling books at the price of bread

'Low-cost' publisher Vincent Safrat sells the tomes to poor families for 80 cents

CAROLINE DE MALET, LE FIGARO

It's Sunday on a long spring weekend in Paris, and the mini Parisians of the 18th arrondissement are all jostling for a spot in the Jacqueline de Romilly library.

The children make their way toward the stacks of books piled up at the Lire c'est partir stand, which has been set up as part of the Salon du Livre de Jeunesse Solidaire (the Youth Solidarity Book Fair). The children's shared sense of excitement makes it hard to move, never mind reach one of the coveted works of fiction.

This hyperactive has a sole reason: as if by magic, these little ones - who have never owned a book in their lives - are suddenly proprietors of a novel or two. Once in their hands, the frantic reading of these tales begins.

Without delay, Sophie dives into *Neige Blanche et les 7 géants* (Snow White and the Seven Giants), while Paul joins the queue to get his copy of *L'Apprenti Mouquetaire* (The Apprentice Musketeer) signed by the illustrator Gregoire Vallancien, who is there alongside several authors.

At only 80 cents each, these books are a bargain. In this quarter, not far from the Paris ring road and bordering Saint-Ouen - a low-income suburb - Vincent Safrat has brought a little happiness to more than one home.

Safrat may not run in the prestigious Saint-Germain-des-Près literary circles, but that didn't stop him selling around 2.5 million books in 2016.

So what's the secret behind this publishing disruptor?

The key lies in the price: since a children's book costs



Vincent Safrat realised that a book's price goes up due to high distribution costs. -VINCENT BOSQOT POUR LE FIGARO

an average of seven euros, Lire c'est partir is able to defy all market competition hands down.

What may look like a tour de force from the outside is actually just an idea based on a simple equation: "60% of the price of a book is from distribution costs." Therefore, in discarding traditional transport channels and instead taking on the distribution himself, Safrat is able to drastically reduce his expenses. Even the printing only costs 30 cents for a paperback with less than 160 pages. As for the publisher's profit margin (which is usually around 15% on average), with Lire c'est partir, it's non-existent.

For the company's founder, "any profit is a scam."

It's not everyday you meet a literary miracle worker like Safrat, who's able to sell books like they're bread rolls - and at the same price as a baguette.

Having grown up in the suburbs of Essonne, this self-educated book enthusiast

came into reading a little late. Through discovering Gustave Flaubert's *L'Education Sentimentale* (Sentimental Education), he had a real revelation. "I believe that reading can replace studying. Hence my notion of bringing reading to those who don't read."

### A hunt for unsold books

In 1992, following his first experience of the publishing world, Vincent Safrat began visiting different publishing houses on a daily basis to pick up their unsold books, which are usually destined for the scrap heap. He would then go door-to-door to distribute them every weekend for free around the Essonne region.

"It's the gratitude that the parents express for their kids that strikes me."

However, despite the support of some of the biggest names in the business like Robert Laffont, many publishers have been hard to convince.

Obviously, part of Safrat's success is in being able to

print these works himself at low cost. In 1998, a friendly salesman explained to him that a paperback doesn't cost much more than a franc to make - a fact that had an immediate effect on Safrat. That's when - despite being on government income support (RMI) - he took the risk of ordering 400,000 copies that he then needed to sell in under four months.

When Safrat realised that many schools lack the means to equip themselves, he had a second light-bulb moment. This was when he decided to make educational institutions his company's main focus. Through Lire c'est partir, schools are free to buy books for their students.

"He has revolutionised the market economy because he thinks differently," says the writer and co-founder of Lire et Faire Lire, Alexandre Jardin. Lire c'est partir has 12 employees and six vans distributing books, and even Vincent Safrat finally has a salary.

[www.lirecestpartir.fr](http://www.lirecestpartir.fr)

# Playing the music of their dreams

Zohra Orchestra, a unique all-female group in Afghanistan, symbolises hope

HASSAN KARIMI

In one of the many practice rooms of the Afghanistan National Institute of Music (ANIM), Zariya Adeb is playing the violin with admirable dexterity and concentration amidst a group of students. While this young Afghan girl has long dreamt of becoming a pop singer, her passion for classical music emerged more recently.

When she was only one year old, Adeb fled with her family to Pakistan where she stayed until she was 15, before deciding to return to her own country.

"I came here at the end of 2014. When I was looking for a music teacher, I found this institute, where you can learn music in a professional way." Currently in her final year, Zariya Adeb has been studying the violin for two years. She's ambitious and hopeful. And yet, only ten years ago, these music lessons would have been completely banned.

ANIM was first opened in 2010 by Ahmad Naser Sar-mast, the current director, although its history goes back even further. The institute is rekindling a musical teaching tradition that was severely weakened over the course of political upheavals.

With the original creation of the music school in 1974, music became a part of the national curriculum in Afghanistan. The school held classes until 1988 when it closed due to the war, and it then stayed shut throughout the rule of the Taliban, since music was made illegal.

The school reopened its classrooms when Hamid Karzai, the former president of Afghanistan, came to power. In 2008, Ahmad Naser Sar-mast began a project called the "Reconstruction of Afghan Music", funded by the World Bank. Two years later, the music school became ANIM and began teaching courses in both classical



Musicians of the Zohra Orchestra train at a session. -HASHI E SUBH

western and eastern music. These include lessons in the violin, viola, guitar, piano, trumpet and flute, as well as more traditional instruments like the robab, ghichak, tambour drum, qashqarcha, the three-stringed sarod, and the delroba.

### First orchestra for girls

Currently, ANIM has around 250 students, including 75 girls. From these ranks, these young women have pooled together their respective talents to form the Zohra Orchestra: the first Afghan orchestra made up exclusively of girls.

Started in 2014, this musical group held its first event at the Canadian Embassy in Kabul: not exactly a small-town crowd. Zariya Adeb talks about those days:

"When I first joined the school there were only five girls. We wanted to organise a group for women since, that same year at the institute, the boys were allowed to create both rock and pop groups. It was like a competition. So we created a choir. As time went on, other girls came to join the group. That's when, only three weeks later, we changed

from a singing group into an orchestra."

"The original idea for the Zohra Orchestra came from a young girl called Mina who was a student here. The idea was taken up by Dr. Naser Sar-mast and, today, we're witnessing the orchestra's success," explains Mohammad Murad Sharkhush, who teaches the qashqarcha, an ancient

When a change occurs in a country, it's better not to worry; you should be positive

MOHAMMAD MURAD SHARKHUSH

Teacher

Afghan instrument. Mr. Sharkhush explains that the musicians in the orchestra are aged between 12 and 21.

Recently, the Zohra Orchestra has had the opportunity to participate in international programmes, like the Davos Forum in Switzerland.

"One of our main successes so far was being able to show to the world a positive image of Afghanistan and its culture. This orchestra is also known as the Angels of Music," he adds.

Every year, between 300 and 400 applicants take the Institute's entrance exam and only 50 are offered places. Around 50% of the candidates are homeless or orphaned children and are proposed by NGOs working on children's rights in Afghanistan. As well as the Zohra Orchestra, the institute has eleven other music groups.

Mr. Sharkhush continues: "when a change occurs in a country, it's better not to worry; you should be positive, and I am optimistic. Afghanistan is a country where art occupies a prominent place in people's lives."

At the Afghanistan National Institute of Music, both rich students and orphans attend music classes under the same roof. They express their emotions - whether that means pain, hope, joy or grief - through music, so that one day they will be able to fulfill their childhood dreams.

As Dr. Naser Sar-mast says: "The Afghanistan National Institute of Music is like an island of hope in the dark. This institute is the symbol of the Afghanistan of tomorrow."

[www.anim-music.org](http://www.anim-music.org)

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A tank to extract ethanol from cotton clothes. At right, Michihiko Iwamoto, Chairman and Founder, Jeplan, Inc. \*NORIKO AKIYAMA



## How textiles turn into fuel in Japan

Michihiko Iwamoto follows the philosophy of circulating everything to protect the environment

NORIKO AKIYAMA, THE ASahi SHIMBUN

When Michihiko Iwamoto worked for a trading house specializing in textiles, he became involved in producing work clothes with threads made from PET bottles. This got him thinking, why not "circulate everything" by returning all used items to their original state and putting them into new products to sell? Ten years ago, Iwamoto co-founded Japan Environment Planning (Jeplan Inc.), a venture company to promote recycling.

The key to Jeplan's business is maintaining Iwamoto's philosophy to circulate everything, while keeping enjoyment in mind. The firm, based in Tokyo, has expanded its business and is generating interest among the public thanks to its eye-catching projects, such as creating a replica of the garbage-powered time machine car that appeared in the 1985 U.S. mega-hit film "Back to the Future."

Iwamoto, now the firm's chairman, was formerly a sales promotion staff member at a textile trading house. He began to tackle recycling in earnest after Japan's Containers and Packaging Recycling Law took effect in 1995.

The law stipulates the roles of consumers, businesses and municipalities in decreasing the volume of containers and packaging, which accounts for about 60% of household garbage, according to the Japanese Ministry of Economy, Trade and Industry.

Consumers sort their refuse into bottles, cans, PET bottles and other items. Municipalities collect the garbage, which businesses then produce new products from.

### Circulate the resource

Iwamoto realized that the participation of several companies would be necessary to achieve his vision.

Yet major companies hesitated to become involved in projects they deemed too

risky, so he began to think about founding a company on his own.

At that time, Iwamoto met Masaki Takao, then a graduate student at the University of Tokyo, who was majoring in technology and management. In those days, bioethanol was starting to attract increasing attention. Takao was sure that it was technologically feasible to produce

Only a small percentage of used clothing currently gets recycled

ethanol from cotton, one of the major raw materials in clothing. The idea behind Jeplan was born.

Many years have passed since the concept of a "resource-circulating society" was developed. Yet concrete progress towards this model is making too little headway, according to Iwamoto.

If Jeplan is successful in circulating everything and, as a result, shows its overall

contribution even on a small scale, people will easily understand what they are doing and have an incentive to participate, he explains.

One example Jeplan has taken is clothing. UNEP reports that "fashion feeds a growing industry and ranks textile and clothing as the world's second-biggest economic activity for intensity of trade (\$353 billion in 2001)." Of the world's textile products, 60% are made of polyester and 30% come from cotton. The environmental costs for the production of these textiles are huge, yet only a very small percentage of used clothing currently gets recycled.

### New life for cotton

Jeplan places collection boxes in retail outlets, and consumers drop off clothing there for recycling. This used clothing is sent to the firm's factories in Imabari, Ehime Prefecture. There, cottons are reborn as ethanol, used as an energy source. Polyester has so far

been processed at the factory of a cooperative company for recycling. However, Jeplan is scheduled to complete its own factory in Kitakyushu this year to recycle polyester.

It was not an easy road until retailers eventually agreed to put collection boxes in their outlets. It took nearly two years for Jeplan to acquire the first agreement, which came from the retailer Ryohin Keikaku Co., which trades under the name Mujii.

Jeplan is not only processing products for recycling but is also developing new ones. Inspired by "Back to the Future" – in which a car that runs on garbage transports passengers from 1985 to 2015 – Iwamoto negotiated with Hollywood companies and succeeded in conducting a joint project with NBC Universal. He purchased a DeLorean automobile to replicate the vehicle in the movie. [www.jeplan.co.jp/en/project](http://www.jeplan.co.jp/en/project)

## Women at the heart of a plastics 'revolution'

20-year-old co-op in Senegal tackles more than pollution

IDRISSA SANE, LE SOLEIL

In 1997, a group of 14 women pooled together to open a plastic waste treatment facility in Thiès, 70 km east of Dakar, under the supervision of an Italian NGO. 12 years later, the project has continued to thrive in the form of a social enterprise called Proplast, in partnership with the French consultancy firm ESPERE. Today, more than one hundred women work for the company and 1,500 tonnes of waste are treated every year.

An image of a dumpster truck filled to the brim with bags of trash hangs on the door of Proplast's office, in the Sillmang district of Thiès. On the day of our visit, heaps of packaged waste were cluttering the loading area. Between five and six tonnes of waste are deposited there every day.

"We receive both bulk and sorted waste. Here we have High Density Polyethylene (PE-HD), Low Density Polyethylene (PE-LD) and Polypropylene (PP)," explained Staff Officer Papa Samba Ba.

In the waste sorting area, women pick up pieces of bottles, containers and buckets, identify them, and then throw them into basins according to their material and colour. The thin-faced Fatou Ba Faye has already spent three years at the waste processing centre. "We earn a decent living with this job," she says. Over a hundred women working both part-time and full-time earn their living here.

"Currently, wages are far better than when we started in 1997," says the current deputy director, Germaine Faye, one of the 14 pioneers of plastic waste recycling in



Workers at one of the Proplast Centers. \*LE SOLEIL

Thiès.

Today, the sector has become an employment generator for indirect jobs in Senegal. The facility operates until 9 p.m. Unlike in the sorting area, the clattering of machines can be heard in the shredding unit. Men protected by white masks empty bags into the tanks of one of the three shredders. After much cracking and crunching, smaller material is recovered at the other end. After the shredding comes the cleaning. Between the processing units, the resulting white and blue pellets are laid out on canvases.

### Reduction of emissions

At the end of the chain is the sifting unit. Women and men lean over sieves extracting the last impurities from the plastic pellets. "This is the final stage of recycling. We obtain pellets which we sell in Senegal and sometimes Europe," explains Mamadou Faye, in charge of production.

There has been a sharp decline in the quantity of plastics being incinerated in landfills, neighbourhoods and within companies thanks to the market created by Proplast, which preven-

ted the emission of 273 tonnes of CO<sub>2</sub> in 2008. "In 2008, when we analyzed our carbon footprint, we realised we had avoided the emission of 273 tonnes of CO<sub>2</sub>. We submitted a case for compensation and managed to sell those tonnes of avoided emissions to the French firm Espere," reveals Macoumba Diagne.

The facility supplies its recycled plastic to processing plants in Senegal and sometimes to foreign companies. "The amount of recycled material sold depends on the demand. Every now and then we have customers asking for material that we cannot supply within a month, as we do not have the raw material," says commercial director Maguette Samb.

"We are aware that we have contributed to the fight against plastic pollution in Senegal," asserts Proplast's technical director, who has supported the women since 1997. The company's waste collection streams are becoming better structured. On certain street corners in Dakar, plastic waste disposal kiosks have been set up for the public. These kiosks will offer money in exchange for plastic waste.

[www.proplast-sarl.com/](http://www.proplast-sarl.com/)

## We are living a story of change

Around the world, there is a movement of ordinary people making a difference every day.

An illiterate Burkinabe farmer who managed to stop desertification thanks to a traditional farming technique. A German doctor who turned a disability into a talent, training blind women to detect breast cancer earlier than any gynecologist can. A 26-year-old Indonesian medical student who tackles poverty and waste by offering the poorest to trade trash for healthcare.

Solutions exist everywhere to create a world where sustainability and profits are compatible, inclusive democracy is restored, citizens from all over the world have access to education, healthcare and appropriate food, men and women have the same rights, and climate change is controlled.

If you believe that people don't need to wait on others to create positive change and that change can be achieved by anyone.

If you believe that building this world starts by changing the way we talk about it, restoring confidence and inspiring everyone.

Then join a growing movement of hope and change:

Sign this manifesto on [sharestoriesofchange.org](http://sharestoriesofchange.org) and commit yourself to spreading these stories of solutions, help them cross borders and have a greater impact.

Join the movement

## IMPACT Journalism Day by Sparknews

Today, 50 of the biggest newspapers in the world will publish in 40 countries, 60 positive initiatives that respond to pressing global issues.

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## Young Moroccans change lives with crowdfunding

STÉPHANIE JACOB

The meteoric rise in crowdfunding projects, which allow an entrepreneur to raise funds from private individuals, has taken many countries by storm.

Two young Moroccans, currently towards the end of their Master's degree in Finance in Morocco, have set up their own such project, under the name Takafull.

It is, in essence, a mobile application that connects contributors to young entrepreneurs who find it difficult to acquire the appropriate funding. Users simply select one or more projects from a menu and read the detailed descriptions and funding history. Once the choice has been made, the contributor funds the project via SMS converted into monetary value. This text messaging service has a unit value of 15 DH (about 1.5 euros).

While half the amount goes directly to the selected entrepreneur, 8.33% goes to TakaFull, and the remainder to the operators and service providers.

The two founders – Omar Tolai and Mohammed

Yassin Kamel – had barely started their campaign when they were spotted and offered support for their endeavours.

Last year, they came fourth in the "Solve For Tomorrow" competition, organised by Samsung Electronics Morocco and Enactus Morocco, an event aimed at encouraging ideas for the improvement of people's lives and the development of solutions by young entrepreneurs using technology (Internet, cell-phone etc...). Today, they are working on their graduation project, leaving the TakaFull application on standby for the time being.

### Target set

"We have everything we need to get started, supplier contracts and mentors, but we are still looking for a developer who would like to get involved in this adventure," Tolai remarks that the team's objective is to finance 410 projects in three years via the application, according to their "most conservative estimate".

<https://www.facebook.com/TakaFull2016/>



The Cropital team trains a farmer on how to improve productivity and reduce risks. ©CROPITAL

## Filipinos throw a lifeline to farmers in distress

Cropital connects investors and farmers through its crowdfunding platform

HELEN M. FLORES, THE PHILIPPINE STAR

Doing good comes with great rewards.

This is the philosophy that keeps Cropital – a crowdfunding platform put up by a group of Filipino millennials to help local farmers – running.

Since it was launched in November 2015, Cropital has provided financial support to around 560 farmers across the Philippines, says 24-year-old Rachel de Villa, the organisation's co-founder and chief technology officer. "Cropital was born out of a need to support smallholder farmers by providing them with services that empower them, improve their productivity, and ultimately increase their income," de Villa says.

"This is made possible by the growing global network of Cropital community who came from all walks of life and are willing to give their hard-earned money to support our farmers," she says.

The enterprise enables low-cost, sustainable agricultural investments to support farmers, thereby promoting inclusive growth, reducing poverty and ensuring food security.

Cropital also helps farmers reduce the risks in farming and improve productivity by processing crop insurance, providing a buyer, and giving training and access to technology partners," de Villa says.

At Cropital, people can choose from a list of farms where they would like to invest their money. Cropital

manages the fund for the farmers, making sure they get the resources they need, and investors receive their return on investment once the produce has been sold.

To date, Cropital has raised \$120,000 worth in investment, de Villa says. The enterprise is globally recognised and supported by various organisations in the Philippines and abroad, including the U.S., Netherlands, and Malaysia.

### Social impact

"For the farm investors, Cropital is a social impact investment wherein you help our farmers and at the same time, you earn for your future," de Villa says.

The amount of investment is from P5,000 to as high as P50,000. The rates

of return for users, on the other hand, range from three per cent to 30 per cent in less than six months.

Cropital was awarded Philippine Social Enterprise of the Year at the Philippine Rice Bowl Startup Awards 2016. De Villa was included in Forbes Magazine's 30 Under 30 entrepreneurs in the Finance and Venture category last year.

De Villa says Filipino farmers live in debt and are taken advantage of by traders. "With Cropital, farmers get paid for labour and also get the majority of the profit." "We believe that agriculture is our country's job creation engine. Only by giving our farmers the support they need, will our country be truly rich."

<https://www.cropital.com/>

## A roof over your head in 15 minutes

PRISCILLA GOY, THE STRAITS TIMES

For six years, a married homeless couple were separated, forced to live apart in Delhi. The husband was in one gender-segregated communal shelter and the wife in another.

Last year, they were able to move into their own "home" – a tent, designed by Singapore-based, non-profit organisation billionBricks. The tent can be set up by one person in 15 minutes without any tools. It is also spacious, with the ability to fit a family of two adults and three children.

The couple even moved in a bed, says billionBricks founder, Prasoon Kumar. More than 20 homeless families pilot-tested the tent in Delhi and Mumbai.

WeatherHYDE – designed by a studio in Singa-



WeatherHYDE can withstand extreme temperatures. ©BILLIONBRICKS

pore – is weatherproof. In the winter, the tent's triple-layer reversible cover provides insulation, while reflective material on the inside traps body heat. In the summer, the tent cover can be reversed to reflect solar heat helping people inside stay cool.

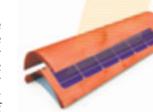
The tent does not require anchoring to the ground with tent pegs. [www.billionbricks.org/](http://www.billionbricks.org/)

## Secretly solar roof

ELENA COMELLI, CORRIERE INNOVAZIONE

Invisible to the naked eye but designed to produce clean energy, Invisible Solar is an innovative photovoltaic (PV) module, produced by Vicenza-based company Dyaqua, to meet the needs of historical cities, towns and areas that are subject to aesthetic constraints.

You can't see the modules because they are embedded into a polymeric compound that is opaque to the human eye, but transparent to the sun's rays. They can be designed to look like any type of construction material – terracotta, stone, cement or wood – in order to blend in with the building's architecture. The first PV roof tile production line is so successful that inventor Giovanni Quagliato is struggling to keep up with orders.



Photovoltaic modules are embedded in Dyaqua roof tiles. ©CORRIERE DELLA SERA

The PV shingles can be used to build a rooftop that is identical to that of surrounding buildings, perfectly fitting in with the landscape of a historic town.

Invisible Solar technology has been tested by scientists at the Italian National Agency for New Technologies, Energy and Sustainable Economic Development. <http://www.dyaqua.it/>



Omar Tolai (centre) and Mohammed Yassin Kamel (left) came fourth in the "Solve For Tomorrow" competition, organised by Samsung Electronics Morocco & Enactus Morocco. ©SAID MRIGUI

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## Zero-power cooling, with plastic

An inventor uses physics and waste bottles to cut the temperature by 5°C inside houses

NAHELA NOWSHIN,  
THE DAILY STAR

Bangladesh is already feeling the heat – literally – as warming trends take over globally. The rural population, which is over 60%, is especially vulnerable. Unlike the urban population, a large chunk of which lives in air-conditioned homes, rural residents don't have such options.

But Grey Dhaka, the Bangladesh unit of U.S.-based multinational advertising and marketing agency Grey Group, may have found the answer. Last year, it introduced the Eco-Cooler, billed as the world's first ever 'zero-electricity' air conditioner.

The way it works is just as mesmerising as its sounds. What is most alluring about it is its simplicity.

Repurposed plastic bottles are cut in half and mounted on a board or a grid to match the window size, with the bottlenecks facing the inside of the house. The board is then installed on the window. The science behind it is this: hot air enters the open end of the bottle and is compressed at the neck of the bottle, turning the air cooler before it is released into the house.

Based on the direction of the wind and pressure generated by airflow, the Eco-Cooler can reduce the temperature by as much as 5°C, the same as an electric air



As simple as it gets. The bottleneck principle helps cut temperature as air flows through.

conditioner.

The man behind the incredible idea is inventor Ashis Paul. The way the idea occurred to him is interesting. One day, he overheard his daughter's physics tutor explaining to her that air cools as gas expands. The inventor in him began to play with this simple concept of physics, and the idea sprang to his mind.

More than 70% of Bangladesh's population lives in corrugated tin houses that amplify the sun's heat. During summer, the heat can

get unbearable with temperatures as high as 45°C.

Grey teamed up with Grameen Intel Social Business Limited (a partnership between the non-governmental organisation Grameen and Intel) and distributed Eco-Coolers free in different parts of the country. Grey sent teams to these villages, where people were taught how to make an Eco-Cooler.

**Spread far and wide**

Today, more than 25,000 households have one in their homes. It has been installed

in places such as Nilphamari, Daulatdia, Paturia, Modon-hai and Khaleya.

Like the Eco-Cooler many innovative ventures have come out of Bangladesh, with a particular focus on the disadvantaged sections.

Being a developing country, Bangladesh faces economic, social and environmental challenges which require out-of-the-box solutions. For these solutions to have a wide impact, they need to be simple, cheap and efficient. The cooler checks all the boxes, perhaps explaining its

immense success.

Paul said, "Bangladesh is one of the poorest countries, where 80% of population is under the poverty line – with no access to electricity, and modern conveniences. Eco-Cooler was designed to be free to make and distribute – using sustainable materials that have low environmental impact. It was designed to bring a bit of relief to the poorest communities around the country."

<http://grey.com/apac/work/key/eco-cooler/id/12475/>

## Cats teach conservation

Play this energy game and convince the feline protagonist

PATRICIA PEIRO,  
EL PAIS

A group of researchers from the Polytechnic University of Catalonia believe cats have a green lesson for people. They are leading a project that teaches families how to live in a more sustainable way, all thanks to a video game called EnergyCat: The House of Tomorrow.

This same group launched the EnerAware project in February 2015. The main objective is to teach families in social housing developments how to save energy using a video game, whose protagonist is a pussycat. The interface is similar to The Sims, a well-known social simulation video game, and it has a system by which the user only advances once he successfully completes missions related to energy efficiency.

Close to 550 people in the British city of Plymouth filled out surveys about their energy consumption. Among them, 237 were interested in participating and 100 were chosen to receive a tablet with the application already installed. The other half who aren't participating will still have their consumption monitored in the same way as the playing households to compare if there are any real savings. Researchers also analysed the energy costs from the previous year when they weren't playing the game. "Now that we



Smart energy is a target for all individuals. • RICCARDO ANNANDALE

have compiled and analysed the initial results, we can conclude that in the first three months there was a reduction of 7% in consumption," says Miquel Casals, research coordinator.

The game rewards actions as simple as turning off lights and provides information on more complex issues, such as choosing an energy-efficient oven. "Our idea was to make it fun. The protagonist is a cat and he fixes things that the family could be doing better," says Casals. Participating families gave their opinions on issues such as the appearance of the houses in the game: "They chose Victorian homes because that is what is most relevant for them."

The application also poses specific challenges de-

pending on the time of the year. For example, it challenges players to reduce consumption at Christmas time by decorating their tree with low energy bulbs. "When you do something that wastes energy like leaving a lamp on, it's placed in red. Hover your cursor over the lamp and you get information about how you can better save energy." Those playing the game can also "compete" with fellow neighbours and share scores on social media.

Participating households need not play each day and there is no minimum daily interaction requirement. Smart energy meter data sensors allow researchers to monitor their progress. The study will end later this year. <http://energaware.eu/>

## Women in South Korea cook their way to independence

SUYEON KIM,  
DONG-A ILBO

"I have been making the broth for 12 hours now. It is not easy to flavour it without MSG."

In the early days of summer with temperatures reaching 27°C, Vo Thi Ngoc Nhon (37) was making broth in a small kitchen. For Ngoc Nhon, who became a single mother after she emigrated from Vietnam to South Korea to marry a Korean in 2006, the kitchen is the only place she can earn an income. After seven years of doing a variety of different jobs while also looking after her newborn baby, she opened a Vietnamese restaurant near Jangseungbagi Station last year.

It has been 20 years since the phenomenon of 'international marriage' emerged in Korea to overcome the problem of rural men, who could not marry. Such international marriage, based on economic interests rather than love, led to a surge in divorce rates. In the last five years, 1,28,864 international marriages were registered; however, the number of divorces reached 50,853. Oyoiri Asia stepped in to help. Jihye Lee, who founded the company in 2008, said, "I wanted to help marginalized women through the restaurant business." The enterprise started in a small corner of Sangsu-dong, Mapo-gu, and is now



Vo Thi Ngoc Nhon, right, and Pham Thi Thuan opened 'Asian Bowl' after interning at Oyoiri Asia. • CHEOL MIN AHN

expanding its activities as far as Nepal.

**A licence after 19 attempts**

Ngoc Nhon became the first entrepreneur produced by Oyoiri. In 2006, she migrated to Korea and gave birth to a child shortly after. However, her marriage did not last long. In 2010, she found herself alone with her son, without alimony. Two years later, she met Oyoiri's founder. She got four years of cooking training from the head chef of Oyoiri, and gained a licence in Korean cuisine after 19 attempts.

Last year, she opened a Vietnamese restaurant, called 'Asian Bowl' near Jangseungbagi Station. It started with a deposit of 20 million won and a monthly rent of 80 million won. To make profits, she needed to sell

more than 80 dishes of 7,000 won. However, this half-year-old restaurant has a maximum of 50 customers per day. "I do not use MSG [monosodium glutamate]. I will find a soup flavour that even babies can eat," Ngoc Nhon said. She prefers to make a homely taste using only natural ingredients.

Her dream is to settle in Korea while making food from her homeland with other women like her. She works with another single mother, Pham Thi Thuan, 26. Thi Thuan also married at the age of 19, and got divorced in 2011 shortly after her baby was born.

The goal of the social enterprise OYOIRI ASIA is to support women like Ngoc Nhon to become self-reliant and live their lives. <http://www.oyoiri.asia/>

## Waste is the secret of their energy

In Indonesia's Central Java region, villagers make biogas from tofu refuse – and save on cash

MEGANDIKA WICAKSONO,  
KOMPAS

White smoke billows from the kitchen of 52-year-old Tumirah, a tofu maker in Kalisari village, Banyumas, in Central Java. Burning wood boils the soybean stew in a large stove called a kawah, or crater, by the locals.

In one day, Tumirah can process 80 kg of soybean to make yellow tofu, which also produces 30 buckets – or 600 litres – of foamy, smelly waste water. The water was earlier discarded, but it is now piped to a digester about 300 metres from Tumirah's house and processed into biogas. The biogas is then channelled through a smaller pipe to light the stove for cooking.

Tumirah said her family has been using biogas for three years, as opposed to liquid petroleum gas (LPG). "The flame is good and I prefer using biogas rather than an LPG canister for fear of explosions." She also claimed it helped her save money, since she only needs to drain waste water from her tofu production and pay Rp 15,000 (the local currency) per month for the biogas installer for maintenance and biogas management.

According to the Kalisari village chief, Aziz Masruri, the village has been known as a tofu producing centre since the 1970s. The tofu from the village is chewy and



One of the biogas processing units in Kalisari village, Banyumas, Central Java. • MENJANGA NUSANTARA/KOMPAS

solid, but not sour.

In the village, which has a population of 4,671 people, there are 250 tofu makers. On average, each tofu maker processes 50 kg of soybean a day and can produce 1,500 pieces of tofu. The liquid waste can reach seven litres for every kilo of soybean.

**Health and harm**

Rifda Naufalin, a lecturer in food sciences and technology at the University of General Soedirman's Faculty of Agriculture, said tofu liquid waste contains vegetable protein, vinegar and organic acid. It is slightly acidic. "If the organic material is fermented, it can produce methane gas that can be

used for cooking," she said.

Naufalin said untreated waste water has a pH of 4-5, which can kill fish and cause rice crop failure. The organic materials, if not managed properly, will decay and produce ammonia gas that emits a bad smell.

Earlier, the tofu makers dumped the waste water into the river, causing pollution and turning the water smelly and foamy. "It used to be a dirty river. In addition to being unsightly, the smell was so strong," Masruri said. In one day, about 70,000 litres of liquid waste were dumped into the river.

The pollution problem was resolved by the construction of five waste water

treatment plants, built in phases between 2010 and 2014 with the help of a number of institutions. "Now, 142 of the village's 250 tofu makers pipe waste water to the digester containers, which generate biogas for 210 houses," Masruri said.

According to Naufalin, the sustainability of biogas production must be maintained by training and improving the skills of residents to manage waste water plants. Currently, the treatment plants are managed by five groups from Bioliota 1 to Bioliota V.

Masruri acknowledges there is still weak coordination and management among group members so the maintenance and utilisation

of biogas is not optimal. "For example, in Bioliota III many pipes have been damaged and broken. The village has allocated Rp 8 million for repairs," he said.

**Maintain it to benefit**

The same view was shared by Taryo, 54, a tofu maker of Bioliota I. Taryo, who has processed 75 kg of soybean a day for the past two years, is no longer able to use biogas because the stove and pipes are damaged.

Wardoyo, 42, the manager of the Bioliota IV wastewater plant, admitted that problems often occurred due to the large amounts of dirt, wood and leaves in the waste water container.

## Solar and kinetic: the future of sustainable power for cities?

If the system proves to be effective, it will be extended to New York and Los Angeles. It may also be used to provide clean and free electricity to villages in Africa



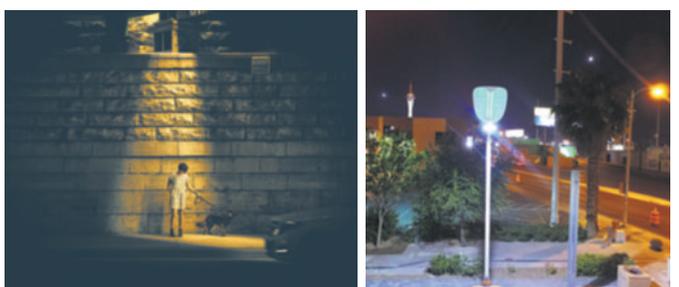
EnGoPlanet lamps are powered by solar energy. • ENGOPLANET

C. HALLÉ,  
MON QUOTIDIEN

Engineers in Las Vegas, Nevada, are testing a new system to illuminate the city streets. As if by magic, these solar-powered streetlights can switch themselves on and off when people pass nearby. The aim of this invention? To reduce both pollution and electricity costs.

Located in the middle of the desert, Las Vegas enjoys high levels of sunshine throughout the year making it an ideal place for solar energy use. For this reason, the company EnGoPlanet recently installed four Eco-friendly streetlamps on a busy square in the city.

The system is quite simple. A battery is connected to solar panels above the streetlights that store the energy needed to illuminate the square. But that's not all; the



The streetlights switch themselves on and off when people pass by. • MATTHEW HENRY & ENGOPLANET

battery is also connected to kinetic tiles built into the sidewalk. Whenever a pedestrian walks on the slabs, the energy produced by the

weight of their movement is harnessed. Thanks to small generators, each step generates 4 to 8 watts, depending on the pressure exerted. If

the system proves to be effective, it will be extended to other cities like New York or Los Angeles.

The company is also aiming

to raise money on the Indiegogo website to provide clean and free electricity to villages in Africa.

[www.engoplanet.com](http://www.engoplanet.com)



A winning idea. The I-Drop Water Team with their product, which produces no waste stream after filtration. • CHIVAS THE VENTURE



## I-Drop Water makes a splash

A nanocarbon system removes harmful micro-organisms at a fraction of the cost of bottled water

MICHELLE BAO AND JACQUELYN GUILLEN

For Petunia Mohale, safe drinking water was not a given.

After discovering rust inside the pipes at her home, Mohale was hesitant to drink tap water.

According to a 2015 report from the World Health Organization (WHO), 1.8 billion people around the world use a drinking water source contaminated with faeces. Mohale was one of approximately 300 million people in Africa who do not have access to safe drinking water.

So when a sales representative for I-Drop Water approached her about installing a water purification system at her tuck shop in Soweto, Mohale agreed.

"People don't have a choice between this really stark alternative of either risking your health by drinking unsafe water or finding a way to pay for incredibly expensive bottled water which is environmentally devastating and just really inefficient," said James Steere, co-founder of I-Drop Water.

Steere and Kate Thiers

Steere founded I-Drop Water as an alternative solution to make safe drinking water affordable and accessible for people like Mohale in South Africa and the African continent.

Since its founding in 2015, I-Drop has partnered with grocery store owners in four African countries (South Africa, Zimbabwe, Botswana and Ghana) to install over 60 filtration systems and has already sold over half a million litres of safe drinking water.

I-Drop purification systems are installed in any grocery store with access to a running tap, at no cost to the shop owner. Customers can then purchase safe drinking water for just R1 per litre – an approximate 80% discount on bottled water. At the end of each month, I-Drop splits the profit from water sales evenly with the shop owner.

"It's a price point low enough for just about everyone to afford and it's incredibly efficient," Steere said of the business model.

"We've removed these capital cost barriers by mak-

ing it [the filtration system] free for any grocery store to install in their shop and start selling."

In the months after installing the machine, Mohale sold around five bottles of filtered water a day, with more on the weekends. She encourages customers to buy I-Drop water, despite their initial reluctance. At first cus-

**Capital cost barriers disappear as the system is free to install**

tomers thought it was just tap water and not safe like bottled water, she said.

**No loss of quality**

But the I-Drop filtration system is just as effective and more cost-efficient than the bottled water industry because of three major components: the filter itself, cellular networks and environmental sustainability.

The I-Drop system's filter, which is manufactured in the United States, uses a nanocarbon configuration to remove viruses, bacteria, and

cysts – anything that is carbon-based and could make someone sick – while retaining minerals.

"The filter produces no waste water. It's a simple configuration of water that comes in contaminated, comes out the other side clean, and that's essential because there's a lot of water constraint," Steere said.

While the filter is efficient, effective and requires minimal oversight, Global System for Mobile communication (GSM) technology connects each machine to the I-Drop platform, allowing each machine to be monitored remotely.

"I'm the data nerd. I'm the one who manages the whole platform and I'm the one that diagnoses problems," Thiers Steere said.

While an I-Drop technician is available to repair the machine should it malfunction, Thiers Steere is typically able to address any technical problems remotely via the data she receives from it.

As a result, the personal oversight by I-Drop over each machine is limited to a filter change every 6 or 8

months. But even then, store owners can be trained to replace the filters. Also, because it is designed to run on solar power completely, it can also run a pump and communications on solar power.

**Eco-friendly move**

The project also reduces plastic consumption. Consumers bring their own container or purchase a reusable container.

Ultimately, I-Drop aims to be an environmentally friendly, affordable alternative to the bottled water industry and a practical solution to deteriorating water infrastructure.

"The massive investment needed by the government to make all the water that's reaching people safe to drink is unrealistic," Steere said.

"Instead, why not treat drinking water as a food. If you can bring the price down to a point that everyone can afford it and you use existing channels [grocery stores] to get it to them, you've addressed that specific issue," he added.

[www.idropwater.com](http://www.idropwater.com)

## Swim to survive: Creating a safer environment

JAN VICTOR R. MATEO, THE PHILIPPINE STAR

With over 7,000 islands, the Philippines has some of the best beaches anywhere.

Ironically, the country also ranks high in terms of drowning-related deaths – especially among children. A recent WHO study showed that an average of 2,496 people died in the Philippines due to drowning every year between 1980 and 2011. While the government is implementing various initiatives to address the issue, there is a lot to be done.

In 2015, a group of Australian students from Griffith University, headed by Andrew McLean, decided to implement a drowning prevention program across the Philippines.

FLOAT Philippines promotes engagement between international and local organisations – including the government – to come up



Andrew McLean with the Zambales Team. • FLOAT PHILIPPINES

with strategies that will cut drowning mortality. The organization plans to implement "learn to swim" and "surv" life-saving programmes, particularly in tourist resorts, such as Baler in the north west of the archipelago.

"For the 'learn to swim' project, we are hoping to partner with Baler Central

Primary School to create a sustainable swimming program. We hope to extend the current teachers' expertise and reach more swimmers," notes McLean. "We think everyone should have the ability to learn to swim and enjoy an aquatic environment," says McLean.

<https://www.gofundme.com/float-philippines>

## Hello Tractor is Africa's Uber for the farm

LEKAN OTUFODUNKIN

For small-scale farmers in Nigeria, especially in the northern region, getting tractors to use on their farmlands to boost the yield has always been difficult.

Many of them can't afford to buy one due to the high capital cost, while the country's federal government which is the major supplier of tractors is not able to meet more than four per cent of their requirements.

In 2014, the social enterprise Hello Tractor set out to address the issue. "The smart tractor is a two-wheeled vehicle with GPS antenna that allows us to track its usage and telematics, and which collects and transfers data in areas



Farmers raised yields with the smart machine. • HELLO TRACTOR

without internet," says company founder Jehiel Oliver.

Oliver's social enterprise is improving food and income security by building a network of "Smart Tractor" owners, enabling small-scale farmers to request and pay for tractor services via SMS

and mobile money, as a just-in-time service.

Hello Tractor coordinates low-cost financing for purchase of a Smart Tractor. Since its launch in 2014, farmers have seen yields rise by 200%.

[www.hellotractor.com](http://www.hellotractor.com)

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Women at a conference to create awareness • RZECZPOSPOLITA

## A 2-minute test staves off cervical cancer

Polish activist reaches out to women

JOANNA STAWICKA

"People often think that cancer, and especially cancer that affects women, only impacts the older generation, while younger, active cancer patients are isolated exceptions," says Ida Karpinska, head of the Kwiat Kobiecoci (Flower of Womanhood) society. That was also what she believed, before being diagnosed with cervical cancer. "I was 30 years old and working as a graphic designer at a publisher," she remembers. "But there were plenty of other young people." The youngest patient with cervical cancer she knew was only 16 years old.

Ida was able to fully recover because it was detected early enough. She regularly went for cervical screening. Unfortunately, the majority of women in Poland skip these prophylactic tests, and when Ida realised this and reflected on her own situation, it impacted her greatly.

The statistics are clear: even though the government will pay for a prophylactic test once every three years, as many as 80% of women don't make use of this opportunity. As a result, the cervical cancer is discovered too late, and half of every 10 women in whom it is detected every day die, according to the Polish Oncology Association.

The National Cancer Registry states that Poland has one of the highest morbidity rates (an incidence of about 3,000 people per year) and fatality rates in Europe. The number of women dying of cervical cancer in Poland is 70% above the European Union average. Furthermore, experts from the World Health Organization believe that almost 100% of cases are due to the human papillomavirus (HPV), and this debunks the idea that cervical cancer has a genetic origin.

"People are now more informed about cervical cancer, but 11 years ago when I got it, it was hardly mentioned. Nobody talked about diseases from the

wast downwards. At that time the big movement was about women who had mastectomies. My aim is to provide the same level of support for women who are struggling with cancers of the reproductive system," explains Ida.

This was how Kwiat started in 2006. The organisation aims to raise awareness of cervical cancer and to support women with the condition. "Kwiat is one positive outcome of my illness," Ida jokes. Kwiat's main office in Bielany, Warsaw, has six staff members and two midwives. Over a hundred volunteers also help out.

The number of people involved in the organisation increased dramatically following a new publicity campaign. "The worst feeling is when we hear that a patient whom we've been helping has lost the battle. It really gets us down and we regret not having been able to reach out before the cancer started to develop," says Ida.

She adds that with early detection the guarantee of successful treatment is almost 100%. When the cancer is caught at an early stage and the surgery is not very invasive, these women even have a chance of having a baby.

### Mobile testing units

Ida's most important campaign for the past eight years is called "Beauty in health" in which she tries to convince women to make time for a thorough gynaecological screening once a year. Part of the campaign involves mobile testing units. The test itself takes only two minutes. "The mobile units screened 308 women in Warsaw this year. One in 10 had tumours," she says.

<http://www.kwiatkobiecoci.pl/>

## Putting wheelchair users behind the wheel

A family business in the Czech Republic has made a breakthrough in designing cars for the disabled

JANA KLIMOVA  
MAGDALENA FAJTOVA

Many men have boyhood dreams of building their own car. The vast majority grow out of the idea, or settle for a go-kart. But Ladislav Brazdil and his two sons made sure their dreams came true: Elbee Mobility, their family business in the small town Lostice in the Olomouc district of North Moravia, the Czech Republic, is now manufacturing its own Elbee cars and is even beginning to tap into the world market.

The Elbee is a weird vehicle. It opens from the front, and you don't climb in, but ride straight into it in a wheelchair. It's an unrivalled concept that saw the Brazdils and the Elbees voted among the top 100 bright ideas in Central and Eastern European countries in 2015.

Elbee Mobility was a spin-off from the business ZLKL (a Czech abbreviation for Lostice Light Construction Works), an outfit that originally had nothing to do with cars.

### Form-turned-factory

Built by Ladislav Brazdil Senior on the ruins of farm buildings that used to be part of a local collective, the family business today has about 200 employees and an annual turnover in excess of 350 million CZK (more than \$14 million). Ladislav Brazdil



Elbee cars open at the front, giving wheelchair users open access • RESPKST

Sr. bought the farm with a business partner when it collapsed after the Czech revolution. His big break came in 2003 when he decided to buy out his co-owners. Then, instead of reconditioning the old machinery, Brazdil Sr. invested in modern and more reliable technologies.

When a design engineer asked him about an idea he

had in mind, Brazdil Senior went after his dream of creating his own product: an urban micro-car designed specifically for disabled drivers.

The road to assembling the final product was a long one. The decision to make a front-opening vehicle meant considering how to raise both the hood and steering

column to allow wheelchair users to drive in.

### Direct driver access

This direct driver access was a fundamental principle of the whole project. Ordinary vehicles adapted for wheelchair users simply do not resolve the problem of what to do with the wheelchair. If wheelchair users

don't have enough strength to stow it themselves, they need help.

A major advantage of front-end opening is that wheelchair users can park the car facing the pavement. If they have rear-end opening they can reverse up to the curb, but for many wheelchair users, this is very complex, especially if they

have restricted neck movement. With face-forward parking, the driver can see where he or she is going and where to release the wheelchair ramp so as to ride out of the car safely, among pedestrians on the sidewalk, and not onto the roadway.

Homologation is the approval process of certifying vehicles as roadworthy, and this was essential for the Elbee. Official certification was granted for the Czech Republic in 2010, for a vehicle with a two-stroke engine capable of a top speed of around 50 miles an hour. Three years later, the car was approved for the entire EU, the first model hitting the market in end-2014.

The historic first customer was Frantisek Trunda from Brno, who lost both legs below the hips years ago.

So far, the business has produced many vehicles which are now on the roads in France, Italy, Switzerland and the United Kingdom.

One limiting factor, specifically in the Czech market, is the price. The current price is 600 thousand CZK (almost \$25,000), and although the effective purchase price can be cut by two-thirds with subsidies, it is cheaper for wheelchair users to modify a normal car, and indeed many have already done that.

[www.elbeemobility.com](http://www.elbeemobility.com)

## Raising the confidence quotient

Rabota-i helps youth who leave orphanages find jobs — and a strong personality

ANGELINA DAVYDOVA,  
KOMMERSANT

"Rabota-i" is a social recruitment agency, based in St. Petersburg, Russia, which helps international and Russian companies recruit job applicants from disadvantaged social backgrounds.

It seeks to provide employment to youth who have recently left state-run orphanages or NGOs, and also to young disabled people with no prior work experience.

Tatyana, 19, a recent graduate from the SOS Children village Pushkin, outside St. Petersburg, now works as a cashier at an IKEA store.

"Before this I only worked against my fears," she says. For the first nine months of her employment, she was under the supervision of her IKEA colleagues and the specialists of "Rabota-i".

"If you grow up in an orphanage in Russia, you end up having practically no skills by the time you leave. Public care systems are very strictly structured and socially isolating, which means that you also tend to have very low motivation. You end up living on social welfare



A working day in the life of Rabota-i. At right, its founder, Mikhail Krivonos •RABOTA-I

and communicating with a handful of other leavers", says Mikhail Krivonos, founder of "Rabota-i".

Six years ago Mikhail left his job at an international consulting company and set "Rabota-i" ("rabota" meaning "work" in Russian). The social enterprise was created following the model of similar large-scale Scandinavian organisations - Samhall from Sweden, Vates from Finland or Klappjob from Denmark.

Every year in Russia some 10,000 to 15,000 young people leave state-run social care institutions (between 300 and 400 in St. Petersburg), with only 7% to 10% finding employment, and only actively contributing to soci-

ety. The majority of young graduates live on social welfare and socialises in closed groups. Some of them go onto engage in criminal activities and suffer from alcohol or drug abuse.

### Investing in training

"Rabota-i" invests in training and coaching candidates. It also assists companies with adapting to new employees.

"We are working to fulfill the demand of businesses — the financial support and control of "Rabota-i" also comes from a number of Russian and international companies (including Melon Fashion Group, IKEA, Gazprom Neft, East Capital and Jochnick foundation)", Mikhail says.

The second target group is young people with disabilities, who have grown up in care institutions or at home, and find it extremely difficult to enter the job market. "I have always felt ashamed of my disability, which prevented my communication with people and chances of finding a job. However, when I came for a job interview with Maersk Line I finally felt comfortable, as if they didn't notice that I was disabled," says one of the applicants, Alexander, 25.

Last year, "Rabota-i" trained around 700 youth in St. Petersburg. Many became junior shop assistants and administrative assistants.

<http://rabota-i.org/>

## He drives away pests with aromatic plants

Organics lead to higher yields

BENJAMIN POLLE,  
JEUNE AFRIQUE

Despite the use of mineral fertilizers soaring in Africa (by 130% between 2008 and 2015, according to the International Fertilizer Development Center), the market for natural organic inputs (such as manure, leaves, and compost) remains very small.

This has not deterred Gildas Zodome from setting up his own organic pesticides and fertilizer company, Bio Phyto Collines.

### Following his ancestors

It took Zodome two years to produce the first prototype — made from a mixture of aromatic plants (eucalyptus, neem seeds, orange, hyptis; commonly known as bushmint) — finding his inspiration in the pest control and fertilization methods used by his ancestors.

According to Zodome, "On one hectare, we measured an average production of 4 tonnes of rice with our products compared to 3 tonnes using chemical inputs."

Only Zodome's best-per-



Bio Phyto Collines founder Gildas Zodome and his product • BENITOINFO

forming pesticides and fertilizers are now being distributed, and his company's three key products are now finding success outside Benin, in Burkina-Faso — where the company has benefited from the assistance of the business incubator La Fabrique — as well as in Niger, Madagascar and soon, Togo.

Bio Phyto Collines produces 400 tonnes of organic fertilizer annually and 15,000 litres of organic pesticides.

The company has reached a turnover of 100 million CFA francs (€150,000).

[biophyto-benin.com](http://biophyto-benin.com)

## How an Indian tree is fighting climate change in the Maghreb

In the battle against creeping desertification in three countries, the 'Acacias for All' project is using the moringa tree as its green weapon

MOHAMED SALEM KECHICHE,  
LA PRESSE

"Basically, the ground had deteriorated and there were no more shrubs. The soil had become impoverished due to conventional agricultural methods," explains Hossn El Oujoud Tbarski, head of communications at Acacias for All.

Although the acacia moringa is not an officially registered Tunisian tree, this enterprise is in the process of changing the Maghreb's agricultural landscape using this magical plant.

With an almost negligible thirst for water and leaves that can be made into powder and sold at a high price on the European market, this tree is helping the local communities respond to both water scarcity and poverty in the region.

The project was originally launched by Sarah Toumi, the granddaughter of a farmer who believes that Tunisia has fallen into a vicious circle.

While the country con-

fronts the effects of climate change and increasingly frequent droughts, the choice of Tunisian crops being cultivated has not changed and they continue to consume vast quantities of water. For Sarah, the situation is serious.

It all began on her grandfather's land, which sits in the agricultural Hencha region to the north of Sfax.

As is often seen in Tunisia, water has been lacking in this area for several years. To get the ball rolling, she started working in a 50-year-old olive grove planting natural acacia.

### A sub-continental gift

Not many Tunisians know this but the tree came to the country from the Indian sub-continent and flourished in an arid environment. Its deep roots allow it to draw water from 60 metres underground, which also provides the secondary benefit of limiting irrigation and creating a natural barrier against erosion. The canopy



Moringa being cultivated by Acacias For All. (Right) Women pack supplements made from the dried leaves of moringa • LA PRESSE

protects the soil and even restores it through nitrogen fixing.

In 2012, the pilot project against desertification was launched in the village of Bir-Salah, near El Hencha. With the support of the young team at Ashoka Venture, Sarah established a

demonstration centre for her tree nursery that could be used for "sustainable agricultural practices."

Fourteen regions took part in the reforestation campaign, mainly in the southern regions of Gabes and El Omrane. The company relies on



"ambassadors set up as co-operators who carry out the work." The organisation then takes part in repurchasing the produce, which comprises things like herbal tea, honey and powdered leaves.

To give the farmers' traditional production methods a necessary shake-up, Sarah

started working in rural areas, often with women.

For the most part, the women had their own small plots of land and very little access to scientific information or to potential markets.

Sarah noted that these women were much more receptive to ideas of change

and innovation, and when she proposed her project, very few refused. They quickly saw the acacia as an important source of income.

Acacias for All supplies the seeds, and when the tree is big enough, the female volunteers cut the branches, dry the leaves and powder them. Rich in vitamins and minerals, this powder is transformed into food supplements, honey and herbal teas for the European market. Each woman pays a small fee and is given the opportunity to learn about business techniques and how to market the produce.

### Growing ambitions

Since it first began, the project has expanded vigorously: around 50,000 trees have now been planted. Sarah's ambition is to plant one million trees by 2018 and spread the company's activities throughout the Maghreb.

Since it covers the likes of Algeria and Morocco, the agricultural problems present

there are very similar to Tunisia's.

A large portion of the population of this area is employed by the agricultural sector (around 40% in Morocco, 11% in Algeria and 16% in Tunisia) despite the fact that arable land is becoming scarce in these semi-arid zones. Farmers are still growing olive and almond trees, which are two highly water-intensive species, and the region is facing the same scarcity of water sources.

### Search for allies

However, Sarah is aware that replicating her winning cooperative formula throughout the Maghreb is an ambitious step. In order to take her project to three different countries, she needs to find local allies on whom she can rely.

Without a doubt, the young Tunisian hopes that her successful career so far will inspire others, and that other women, especially, will feel equally strongly about shaking the deeply anchored roots of traditional agricultural practices and adopting her beneficial idea.

[www.acaciasforall.org](http://www.acaciasforall.org)

# FoodCloud ends the culture of waste

Project to re-distribute food from retail outlets close to sell-by date is a success in Ireland, and is catching on in Britain

CATHERINE CLEARY,  
THE IRISH TIMES

Aoibheann O'Brien remembers that first box of food five years ago. She and co-founder Iseult Ward picked it up at a farmers' market and dropped it off to a youth services centre in Dublin. "We thought, 'We feel great about this.' It was artisan sausages and really nice sourdough bread and I think there was raw milk as well."

The delivery was a dummy run for FoodCloud, a college project they set up. It became a tech start-up that connected businesses that had surplus food with charities who needed food. Five years on, 8,300 tonnes of food, more than 18 million meals, have been diverted from landfills. FoodCloud employs 30 people taking food waste from almost 2,000 businesses in Ireland and the U.K.

At their new Dublin headquarters, the visitor book sits on a stand made from a timber pallet, an ode to the idea of usefulness over waste. The bright offices were painted by prisoners on day of release from an open prison. A tech team is working on the ground floor and a call centre team upstairs is fielding calls from U.K. supermarkets, where more than 1,600 branches of Tesco and three Waitrose stores are posting donations of food.

## Stores to warehouses

Until late 2016, FoodCloud transactions involved small consignments of food collected by individual charities from the delivery bays of supermarkets and shops to



Co-founders Iseult Ward, left, and Aoibheann O'Brien in Tallaght, Dublin. Working with partners in the food, retail and charity sectors, their enterprise is redistributing 4,000 tonnes of food in Ireland in 2017. **PHOTO: CULHANE**

serve the most disadvantaged people.

Now, at their large warehouse, the scale of their new operation, FoodCloud Hubs, is visible.

"There's a lot wasted at retail level but there are huge volumes that go to waste before they even get to a supermarket and they're in big bulk," O'Brien explains.

So this warehouse, and others in Cork and Galway, take pallets of food from Irish businesses, including supermarket distribution centres and food producers, and deliver it to charities. Among the vast haul are

two pallets of Nutrigrain bars, which would have ended up in landfill or an anaerobic digester because their best before date is looming. In a cold store, whole ducks and turkeys from Aldi's Easter range are stored, frozen down to expire their life. It's a long way from that first box of bread, milk and sausages.

O'Brien first got excited about food and sustainability when living in London on a graduate scheme with investment bank JP Morgan. A law and accounting graduate, she returned to Dublin to do a masters degree and

decided to volunteer with a small food waste project.

## The power of two

She went to pitch the idea of a surplus food cafe at a social enterprise event and met Trinity College business student Iseult Ward, who loved the idea. "We spotted a gap in the market for this supermarket level surplus," O'Brien says. "That's where we thought it was really interesting because in the same communities there was surplus and scarcity. We thought: wouldn't it be amazing if you could bring it all together? You had all

these multiples [throwing out food] and then you'd walk down the street and there'd be a sign for raising money for [the charity] St. Vincent de Paul."

They quickly learned of the barriers in the modern food system to that simple idea of connecting surplus to scarcity. "There was a guy doing it in Chicago so we spoke to him but when we talked to a more established hub model, he said, 'oh retail is very difficult because it's small volumes, end of life. It's more hassle than it's worth in terms of the food.'" But they were undaunted.

Instead, each barrier became a problem to be worked out. They drew up legal contracts so charities agreed to be responsible for the safe delivery of the food. The not-for-profit ethos of sharing meant they could tap into other resources. "The guy in Chicago was like 'Here use my app.' Guys in London were giving us their contacts."

In October 2013, they got their big break when supermarket group Tesco Ireland came on board. "Until then, it would have plodded along with a couple of cafes and bakeries." They quickly went from one to 13 stores. By the following summer, they had a national roll out with Tesco and hired their first staff.

Now, 274 Irish food retailers connect with 303 charities through FoodCloud. There are still plenty of challenges, not least keeping the operation financially sustainable and getting food out quickly so it doesn't go to waste in their warehouses. But feedback is good. "Food waste and food poverty have to be part of that sustainable food conversation but that's where we see there's huge potential for Ireland to be a leader."

They would like to see all food waste eliminated. In the meantime, they try and ensure surplus food gets to people who need it. "There's a lot of energy and loads of people behind it. You can start something but you need a lot of people throwing their weight behind it. People felt intuitively that this was a really good thing to do."

<https://food.cloud/>



Jessi Baker of Provenance **PROVENANCE**

## A start-up to track product origins

Less than 1% of brands ethically certified

ELEANOR ROSS,  
POSITIVE NEWS

It was when Jessi Baker was studying for her PhD in computer science that she realised her passion project was becoming too important to ignore. She put her PhD on hold and, armed with zeal for digital disruption, focussed her attention full time on Provenance.

The software platform is a means to help people find out where products are sourced from, and how ethically and sustainably. It is designed to improve the transparency of supply chains and, at the same time, promote brands that commit to ethical sourcing, fair working conditions, quality and sustainability.

At the heart of Provenance is blockchain technology, which is best known for powering the paperless, bankless and stateless currency Bitcoin. Blockchain is a means of recording and storing enormous amounts of transactional data. The data, which is unique and cannot be tampered with, can include contracts, receipts, and supplier spreadsheets.

Provenance data can be linked to any physical product, from coffee beans to fish, through labelling, smart tags and embeds for websites or apps.

## Ethical business

"Provenance encourages brands to volunteer data about their supply chain," explains Baker. "We ask them to prove that data, track it, and they must provide links back to proven materials. That way, we can verify an ethical provenance. We are not a WikiLeaks-style organisation, digging for the bad. We want to showcase the businesses that are really trying to be ethical."

In 2016, Provenance completed a six-month trial tracking tuna fish caught ethically in Indonesia. Fishermen sent text messages detailing their catches that were added to the Provenance blockchain, effectively attaching a digital 'token' to the fish as it passes through the supply chain.

The Co-op supermarket then carried out a trial of including products on the Provenance system, and the team now works with more

than 200 brands. Among these is Archie Rose Distillery, based in Sydney, Australia. The company was already keen to take its customers behind the scenes; its distillery is custom designed to show their production process 'from grain to glass'.

"Authenticity is so important, especially in our industry," notes Dave Withers, master distiller at Archie Rose. "Having a link to the provenance of our produce is important, especially as consumers are starting to lose track of where raw materials come from."

The Provenance framework does not only benefit the customer. Brands that can prove that their supply chains stack up nicely could

We are not a WikiLeaks-style organisation, digging for the bad

JESSI BAKER  
PROVENANCE

be able to charge more for their product. Transparency could become a competitive advantage.

Amid a shift in people's perception of value, authenticity is the real currency today, suggests Scott Ewings, managing director of London-based product development studio Big Radical.

Could we soon see brands being ostracised for failing to adopt transparent supply chains? "There is much evidence to suggest that the incoming generation is one led far more by ethics and brands with purpose. 'Fakery' is easy to spot, and then destroy, via social media," says Ewings.

Provenance, which is based in the U.K., now employs 10 staff in four countries and Baker is enthusiastic about meeting the challenges ahead.

"She notes that less than 1% of all brands are ethically certified. "We have an opportunity to help change that. We want to help prove the great work that people are doing already."

Above all, Baker and her colleagues want to nurture companies that are doing things well rather than criticising those who are not.

"We want to reinforce the good and get the good to spread quickly."

[www.provenance.org/](http://www.provenance.org/)

## A twister turns sisters into disaster recovery experts

Massachusetts tornado prompts them to create a best practice website on handling crises with a global reach

DOYLE RICE,  
USA TODAY

Sisters Morgan and Caitria O'Neill never expected a tornado would hit their small hometown in Massachusetts – or that when it did, recovering from the disaster would change their lives.

On June 1, 2011, a pair of twisters ripped across western portions of the State, shocking residents with their suddenness and violence, and causing the state's first tornado-related deaths in 16 years.

One of the twisters, categorized as a huge EF3 with winds estimated at 160 mph, roared through the O'Neills' hometown of Monson, Massachusetts, seriously damaging their house. Almost immediately, the devastation threw both Morgan, then 24, and Caitria, then 22, into the role of disaster recovery experts.

"We just started answering questions and making decisions,

someone, anyone, had to," Morgan said. "On June 1, we weren't disaster experts, but on June 3, we started faking it. In those frantic first few days, we built our recovery machine," she said.

## Shared experience

What began as a way to help their community get back on its feet after a disaster six years ago evolved into recovers.org, a free, easy-to-use "recovery-in-a-box" website to help other cities and towns organize disaster relief.

It can be rolled out in minutes, helping local relief organizers engage in organized action, said Chris Kuryak, the project's chief operating officer. "It's something that could be deployed after every disaster by any local organizer," he said.

The sisters designed the website to help locals manage volunteers and donations, track data, apply for



The period immediately following a disaster is the most important to get attention. **RECOVERS**

grants and request aid through official channels such as FEMA, the Salvation Army or the Red Cross. It also links volunteers with victims, allowing both to alert the other of what's needed and help available.

But the site isn't just for the locals. Often after a disaster, people around the nation and the world, moved by photos and news stories, seek to help but don't know how. Recovers.org lets people everywhere know

what's needed most and how best to donate it. What is key, the O'Neill sisters say, is to capture public attention just after the disaster.

After a natural disaster, there's only a tiny window

before the world turns its sympathy (and donations) elsewhere, they say.

"After a disaster, there's a flood of goodwill," Kuryak said. "There are people who want to donate and people who want to volunteer."

Victims have seven days to capture 50% of the web searches about a disaster, according to Google Trends, said Caitria, now 28, and a researcher at Facebook.

## India uses recovers site

The organization now hosts over 200 recovers sites around the world. Each website has all the functions needed in one place – from hot shower locations to hot meals, sign-ups to donate or volunteer, and ways to privately request help.

Recovers.org sites cover Malawi, India and the Philippines, where challenges include reliable Internet connectivity and the language barrier.

<https://recovers.org/>

## Swiss entrepreneur set to bring cheaper X-rays to Africa

GlobalDiagnostiX is designed to withstand high temperatures and humidity levels, as well as dust, typical of countries in the global south

CÉCILE DENAYROUSE  
BERTRAND BEAUTE

What do a traffic accident, pneumonia and a leg fracture all have in common? These afflictions all require the use of a medical imaging device for a doctor to properly diagnose you. This can be quickly and easily done if you are living somewhere like Switzerland, but it's a very different story for anyone living on the African continent.

"Two-thirds of the global population still doesn't have access to this technology, which is incredible considering that the X-ray was first invented more than a century ago," says Bertrand Klaiber, the founder of Pristem.

To address this global problem, this Lausanne-based entrepreneur wants to bring a robust and inexpensive X-ray machine to emerging markets.

But what's so different between his idea and the models already being used in



Pristem's prototype is efficient and cheaper than those on the market. (Right) Bertrand Klaiber, founder of Pristem **ALAIN HERZOG, EPFL & PHILIPPE MAEGER**

African and Asian hospitals today? The key lies in the design, which has been tailored to the different conditions and constraints found in these hospitals. And that

changes everything. "In most countries of the global south, hospitals are facing a shortage of resources, sudden and frequent power cuts, flooding due to torrential

rain, bombardments of dust and wind, and the heat – they're nothing like the aseptic and air-conditioned hospitals that we know and use. In these conditions, the



machinery that's designed and manufactured in and for the global north quickly breaks down. And since there are no spare parts or maintenance personnel in

place, these appliances quickly become unusable," Klaiber continues.

In designing a machine that can work in these conditions, Pristem was starting

from scratch. "We asked our future users in Africa to explain their needs to us, which we integrated into the development process," says Klaus Schonenberger, co-founder and chairman of Pristem's board of directors.

## Joint effort

Under the direction of the EssentialTech programme of the Centre for Cooperation and Development at the Swiss Federal Institute of Technology in Lausanne (EPFL), a team of 35 researchers and engineers – notably sourced from the University of Applied Sciences of Western Switzerland (HES-SO), the Paul Scherrer Institute and the Lausanne University Hospital (CHUV) – developed a prototype.

The result of their hard work is the GlobalDiagnostiX X-ray machine, which is designed to withstand temperatures of up to 45°C and 98% humidity levels, as well as high quantities of dust. The

electric motors used in industrialised countries to make the arms move have been replaced by a mechanical system, while digital technology has taken the place of radiological films in order to cut back on costs. In the event of a power cut, a specially designed generator will allow the radiology machine to operate for a few hours.

"A patient at the Yaoundé hospital in Cameroon doesn't need the latest technology. Before any of that, they just need equipment that works," states Klaiber.

In terms of hard numbers, Klaiber's growing project plans to create nearly 400 jobs in Africa alone.

"The issue is not only economic, it's also ideological. I left my job in marketing because I needed to regain meaning. Today I have the satisfaction of being able to tell myself that my work is serving a purpose."

<http://pristem.com/>