

**1 SAVVYLOO:** About 2.5 billion people worldwide – 800 million of them in sub-Saharan Africa and 12 million people or 2 million households in South Africa – have inadequate sanitation. Worse, 31 percent of toilets across South Africa are pit latrines or chemical and bucket toilets. These can contaminate underground water, causing health problems.

Dudley Jackson and Richard Mutshekwane, co-founders of Pennine Energy Innovation, were invited to meet community leaders at Muyexe village in Limpopo about an air-to-water proposal.

As a job-creation initiative, households in Muyexe, part of the Greater Giyani Local Municipality in Limpopo and home to about 250 000 people, were given free pit latrines.

But the greater the number of pit latrines, the greater the problem of groundwater contamination became.

“SavvyLoo is a waterless toilet for rural areas and temporary settlements in Africa,” says Jackson. “It is designed to separate liquids from solids, and to dry solids using solar heat and dehydration, eliminating harmful pathogens.”

The airflow also dries the waste, which can then be used as organic compost or to produce energy through a biogas process. It is competitively priced in comparison with pit latrines.

It is also easy to set up, easy to use and easy to keep clean, making it good for the community and for the planet.

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**2 Lumkani:** Every winter, informal settlements around the country experience devastating fires, with the close proximity of homes making it easy for flames to spread.

To warn communities as soon as a fire starts, Lumkani has created a networked detector. Whenever one device rings, others in a 60m radius do too.

The detectors measure the rate of temperature rise.

Centralised devices collect information about the network, check the system’s health, and store GPS co-ordinates. They also send SMS warnings to residents when there’s a fire.

Since November, Lumkani has distributed detectors to 1 200 households in five communities.

It is running a fund-raising campaign to supply 3 000 devices to high-risk communities across Joburg, Durban and Cape Town.

“For 2015, we are looking to grow from that pilot stage of having got our early warning fire detection system into the field,” co-founder Francois Petousis said when he won a R500 000 support package from the Better Living Challenge.

“We want to scale it further into the city and into as many places where we can create valuable impact for people (affected by) shack fires.”

Website: www.lumkani.com

**3 Abomakgereza:** Informal waste collectors are called *abomakgereza* (hustlers) in the townships. They wake up in the early hours to collect recyclable waste material in residential areas and dumps. They sell the material to recycling agents for cash. This is how they make a living.

But the trolleys they use are in poor condition, difficult for motorists to see, and break down easily. Also, the collectors carry huge loads over long distances,



BUSY BOX THEATRE: By day a virtual classroom, by night a business.



ABOVE: The Memeza Community Safety Alarm is an intelligent home alarm system that enables communities to be in direct contact with the police in a crisis.

BELOW: To warn communities as soon as a fire starts, Lumkani created a networked detector.

RIGHT: SavvyLoo is a waterless toilet. BELOW RIGHT: The WHC Leak-Less Valve™ prevents 70 percent of the water loss that occurs when there is a toilet leak, says Paseka Lesolang, founder of WHC.



sometimes more than 20km a day, making the work hard to do.

That’s why Unconventional Media Solutions created durable and functional waste carts and distributed these to *abomakgereza* for free, with protective suits. Trolleys can carry between 40kg and 50kg of recyclable materials, while the new carts can take 60kg.

The carts and the suits have reflective strips to increase visibility in the dark.

“We have established a profit-sharing scheme where a portion of the profits will be distributed to the waste pickers who are part of the Abomakgereza programme,” says Sifiso Ngobese, chief executive officer of Unconventional Media Solutions.

“We are rolling out 400 waste trolleys with our partners and our milestone for 2015 is to impact 1 000 informal waste pickers around the country.”

Website: www.unconventional-media.co.za

**4 Botanica Natural Products:** In sub-Saharan Africa, skin diseases are associated with high mortality rates. Increasing numbers of people are experiencing preventable skin conditions caused by harsh chemicals in cosmetics. In Nigeria alone, more than 20 million



people use skin-lightening products that contain carcinogenic ingredients.

Botanica Natural Products, an award-winning, family-owned social enterprise established in rural Limpopo in 2009, produces indigenous plant extracts in a socially and environmentally sustainable manner and supplies these to the cosmetics industry.

“Our *Bulbine frutescens* extract has natural and remedial benefits,” says managing director Will Coetsee. “It is soothing, healing, moisturising and contains anti-bacterial properties. Our raw materials are easy to formulate with, are affordable, have no side-effects, and are stable for up to two years.”

Besides offering a source of income for more than 24 full-time staff, Botanica ensures the rural community shares in its success by channelling 3 percent of its profits to a foundation that promotes children’s health, social development and awareness around HIV/Aids. Botanica also works with Eco-Schools to teach children how to live in a sustainable way.

Website: https://www.facebook.com/BotanicaNaturalProducts

**5 The WHC Leak-Less Valve™:** Toilets deteriorate with use and often end up leaking, wasting



# Great ideas with small beginnings

Innovation isn't just for tech start-ups in Silicon Valley. Eugene Yiga found seven South Africans catering to local needs

SECOND NATURE: Botanica Natural Products produces and supplies extracts from indigenous plants in an environmentally sustainable manner.

between 30 and 700 litres of water – equal to seven bathtubs – a day.

Because toilet leaks are often silent, users may not be aware of them.

Toilets account for 30 percent of a household’s water usage.

Fixing leaks can save on water bills while helping municipalities – and the country – save our most precious resource.

“The WHC Leak-Less Valve™ prevents 70 percent of the water loss (that occurs) in the case of a toilet leak,” says Paseka Lesolang, founder

and managing director of WHC (Water, Hygiene, Convenience).

“(It) is a water-flow control mechanism for toilets.”

A patent is pending for the valve, which can be fitted to standard and modern vertical float cisterns.

It is being used in controlled environments in the City of Tshwane, the City of Joburg and eThekweni municipality.

“Most people are keen to go green and the WHC Leak-Less Valve™ is a proudly South African product that gives them pride of ownership and a

clear conscience that they are doing so without a change of lifestyle,” Lesolang says.

“It is cost-effective and creates subconscious eco-conscious users.”

“It helps us contribute to the preservation of the most precious commodity to mankind.”

Website: www.whcpty.com

**6 Memeza Community Safety Alarm:** “I was a victim of crime so many times in my life, in the house and in the streets,” says Thuli

Mthethwa. “When it happened to me I did nothing.”

One day, Mthethwa decided to do something about it.

She created the Memeza Community Safety Alarm, an intelligent home alarm system that enables low-income communities to be in direct contact with the police in a crisis.

It works like a cellphone and, when activated, sends text messages to the police, community patrollers, and family members. It has a three-day battery life and, in rural areas, may be recharged with solar power.

“The Memeza Community Safety Alarm includes features like a sound and visual siren, which is installed on the outside of the house so that the police can easily identify the property,” Mthethwa says.

“It also comes with features like a silent alarm, loud alarm, and panic buttons to link to the police, ambulance, fire station, and many more.”

“The alarm system links back to an intelligent back-end, which allows the police to track the alarm activity and do reporting on crime statistics.”

The company has distributed more than 12 000 alarms to girls in schools around Gauteng and is deploying 600 home alarms in Diepsloot through sponsorship. It hopes to start working on a

national programme to make the community home alarm available in other regions of South Africa and beyond.

“It is definitely having an impact on crime in the area,” Mthethwa says.

“The interest we have seen from the communities in Gauteng has been overwhelming and it is clear that there is a need for a low-cost alarm system that low-income communities can implement in their neighbourhoods to help protect their families and friends.”

Website: www.memeza.co.za

**7 Busy Box Theatre:** “During the past year, there has been huge interest in the Busy Box Theatre, its operating model, and its impact on low-income communities,” says Hasan Darwish, founder of Modular Innovations. “The reason for this is that the Busy Box Theatre is designed to perform a dual function, as a business and educational initiative.”

But what is it? By day, the unit is a virtual, self-sustaining classroom that provides pupils with world-class support and educational services they would not otherwise have access to.

At night, the unit is transformed into a simple, sustainable business managed by an owner-operator with the support and partnership of Busy

Box headquarters.

“The vision was to provide revenue generation and job creation in the community through ensuring the sustainability and maintenance of the unit,” says Darwish.

“The units will be placed in low-income and rural communities and uplift their services infrastructure as well as their economic status. In time these units will revitalise rural communities. Site visits every year can be conducted to see the business potential for expansion and further training.”

This pilot received an award from Young People in International Affairs as of the top 35 projects that can benefit Africa.

This led the development team of the Busy Box to create a four-unit innovation lab and community centre. The unit is being built at the Innovation hub. The prototype was purchased by an NGO in Germiston.

“This low-cost lab will allow entrepreneurial community members to engage in courses and procure funding to purchase their own modular business units (which can eventually combine into a mall),” says Darwish.

“It will also provide free education, internet and awareness services to other members of the community.”

Website: www.modular-innovations.com



HASAN DARWISH



DUDLEY JACKSON



RICHARD MUTSHEKWANE



PASEKA LESOLANG



FRANCOIS PETOUSIS



SIFISO NGOBESE



PUSH START: Abomakgereza waste carts and the protective gear have reflective strips on them.