Western Cape Government
Education

EnviroNews
2/2015 June 2015

Ex Africa semper aliquid novi

Always something new out of Africa

The African continent is brimming with a rising **young generation** of bold, creatively thinking innovators and entrepreneurs who are constantly inventing & developing new technologies that are changing people's lives and the environment for the better. These initiatives deserve a closer look and it's time we took notice.

1. The hippo water roller

Country of origin: South Africa

Two out of every five people in Africa have no nearby water facilities and are forced to walk long distances to reach water sources. The Hippo roller can be filled with water, which is then pushed or pulled using a handle. Around 42 000 Hippo rollers have been sold in 21 African countries and the demand exceeds the supply.

2. Portable water pumps

When it comes to food supply, Africa faces huge instability as a result of an unpredictable climate & poor resources. Only 6% of Africa's cultivated land is irrigated, limiting the volume of crops be grown. ***Kick-Start***, a non-profit organisation, makes portable water pumps cheap enough for farming communities in Mali, Tanzania & Kenya to access. As a result, an entrepreneurial middle class has been created, starting with the family farm. 667 000 people have been lifted out of poverty.

3. Farmer Managed Natural Regeneration

Country of origin: Senegal

Senegal is suffering its third drought of the decade, resulting in reduced crops and inflated food prices. Attempts to tackle the resulting problem of soil fertility have largely flopped, and trees planted as part of reforestation schemes have seen only a 5% success rate. The emphasis has now been put on reinvigorating the stumps of nitrogen-fixing trees which were formerly cleared to maximise crop space. Farmers are encouraged to prune the stems and branches of these trees, giving new life to the vegetation already there. This is an inexpensive way for farmers to make improvements with resources they already have. The trees provide shade for livestock (for manure) and leaf litter for humus. Millet harvests have increased from 430kg to 750kg/ha and the eco-system has been given a boost by encouraging wildlife to return.

4. The iCow App

Country of origin: Kenya

Small-scale dairy farmers often live in remote areas that don't have access to valuable information about latest prices of milk or cattle, and they may not keep accurate records of important details such as their cows' gestation periods or their livestock lineage, often resulting in inbreeding and disease. ***iCow*** is an app that works on a basic cell phone. Each animal is registered with the service, which then sends SMS reminders to the farmer about milking schedules, immunisation dates, and tips about nutrition and breeding. Cows are already stronger and healthier.

5. Orange sweet potato

Country of origin: Uganda

More than 3 million children in Africa suffer from blindness caused by a vitamin A deficiency. In Uganda it is estimated that 28% of children are deficient. Currently the problem is combated by giving children vitamin A supplements, but addressing this issue with locally grown food is more sustainable. A new strain of sweet potato (OSP) has been bred which contains between four and six times as much betacarotene as a regular sweet potato, and it is converted by the body into vitamin A. The OSP has been distributed to 10 000 farming households in Uganda. After a two-year study, the vitamin A deficiency in weaned children between the ages of 12 & 35 months had fallen from 50% to 12%.

Sources: www.guardian.com/wold/2012/aug/26
www.forbes.com/sites/mfonobongnsehe/2014

Western Cape Government
Education

EnviroNews
2/2015 June 2015

6. The 'Tutu Tester' Van

Country of origin: South Africa.

South Africa is at the centre of an epidemic of TB/HIV co-infections. An estimated 5,7million people are infected with HIV and, fuelled by this, the country's rate of TB has increased to the third highest in the world. Voluntary counselling and testing is vital for preventing and treating the disease, but communities most affected often live in inaccessible areas. The 'Tutu Tester' is a mobile clinic that takes sophisticated testing equipment and trained staff into areas without adequate health facilities. There is still a stigma attached to HIV and TB, but a combination of anonymity and ARV is having positive effects.

7. Sickle Cell Disease (SCD) Research

Country of origin: Tanzania

Every year, 300 000 children are born with SCD, a genetic blood disorder that results in severe anaemia. 70% of these children are born in Africa, with Tanzania one of the most affected countries. Without treatment, up to 90% of these children will die. Dr Julie Makani from Muhimbili University is working with the NGO ***Wellcome Trust*** to conduct a genome-wide association study to better understand the genetic and environmental factors affecting SCD. These types of study, conducted by young African women, help to give African scientists credibility.

8. The cardiopad

Country of origin: Cameroon

Cardiovascular diseases kill 17 million people worldwide annually. In many African countries, those at risk have to spend huge amounts of money and travel hundreds of kilometres to reach heart specialists in main urban centres. In Cameroon there has been a sharp spike in heart disease among its 20-million-strong population, which is served by fewer than 40 heart specialists. Arthur Zang, a 24-year old engineer, designed a

programme which collects signals generated by the rhythmic contraction and expansion of a patient's heart from electrodes fixed near the patient's heart. A touch-screen medical tablet then produces a moving graphical depiction of the cardiac cycle, which is transmitted wirelessly over GSM networks to a cardiologist for interpretation and diagnosis. It means sudden death from cardio arrest might be preventable in the future.

9. Mellowcabs

Country of origin: South Africa

The MyCiti buses in Cape Town have been a successful mode of public transport in recent years. But many commuters still have to walk a considerable distance either to the bus station or from it to their places of work. ***Mellowcabs*** have been invented to fill this gap, particularly where the difference is less than 3 km. They are high-tech, electric pedicabs manufactured from recycled materials.

10. *Saphonian* bladeless wind converter

Country of origin: Tunisia

Many African countries suffer from a shortage of energy, and wind turbines are expensive to erect. The ***Saphonian*** is a bladeless wind turbine that uses sailboat technology to harvest wind through a sail that follows a non-rotational back-and-forth 3D motion. The kinetic energy is then converted to mechanical energy using pistons. This in turn is converted into hydraulic pressure that can be stored in an accumulator or converted into electricity using a hydraulic generator.

Centre for Conservation Education, 9 Aliwal Rd, 7800 Wynberg, Western Cape, South Africa
tel: +27 21 762 1622 fax: +27 21 762 8690 postmaster@cce.wcape.scool.za www.facebook.com/centreforconservationeducation

11. Ethanol cooking-oil plant

Country of origin: Mozambique

Forests in Africa are being cut down at a rate of 4-million hectares a year – more than twice the worldwide average. Some of this is as a result of the demand for wood and charcoal, which is estimated to still being used in almost 80% of African homes as a cheaper option to gas. Now ***CleanStar Mozambique*** has opened the world's first sustainable cooking-oil plant. One-sixth of the final yield comes from locally grown cassava, which requires farmers to plant in rotation with other edible crops to keep the soil fertile. These products are transformed into ethanol, which is sold on the local market along with adapted cooking stoves also manufactured by the company. The products are popular with city women, who enjoy the clean, locally-made fuel. It performs well and saves them time and money.

12. M-Pepea

Country of origin: Kenya

mpepea
Emergency micro credit

Credit cards are still relatively rarely available to Kenyans, and bank loans are only authorised for large amounts of cash or for investments. Often the only source of emergency cash is loan sharks, with borrowers tying themselves into interest rates of 50% or more. ***M-Pepea*** was launched in 2010 to bridge this gap and provide emergency credit through mobile phones to people who don't qualify for credit cards or bank loans. The money is accessed through a pin code sent to the cell phone, to be used at an ATM. Interest is charged at 10% and the loans are paid in full at the end of the month. ***M-Pepea*** has around 20 000 subscribers and the response has been positive.

13. DIY aid supplies

advanceaid

Africa is a continent often in need of quick, affordable emergency relief, not to mention riddled with un-employment. Smaller African manufacturers have been unable to compete with, for example, Chinese prices when it comes to providing emergency relief, or to meet the vast demands. So aid agencies like *Unicef* have been buying from foreign producers better able to produce these goods at the scale, cost and quality needed. Yet this inevitably requires longer lead times and higher transportation costs than if goods had been sourced locally – and Africans lose out on the work. ***Advance Aid*** is an NGO that aims to make aid destined for Africa available within Africa, from blankets and mosquito nets to basic cooking equipment and hygiene kits, creating jobs in Africa. ***Advance Aid's*** work in Kenya in 2011 marked the first time that emergency relief goods produced in Africa were provided for an African emergency, with 80% of the goods sourced within the country. It put 1,5 billion US Dollars into the Kenyan economy and brought orders to 12 local manufacturers.

14. Refugees United

There are 43 million forcibly displaced people worldwide, with hundreds of thousands of refugee families scattered across the globe. Before 2008, all family tracing was done by refugee agencies, which still relied on paper forms & postal systems to try to locate people.

Refugees United
reuniting loved ones

Refugees United is an online research tool, where refugees can create a free profile and start to search for family via an online database using the Internet or a mobile phone. It is available in many different languages and contains searchable information on refugees from 82 countries. Over 100 000 people are registered.

Proudly African greetings

Sigi, Anton, Mark, Nicci & Lynne