

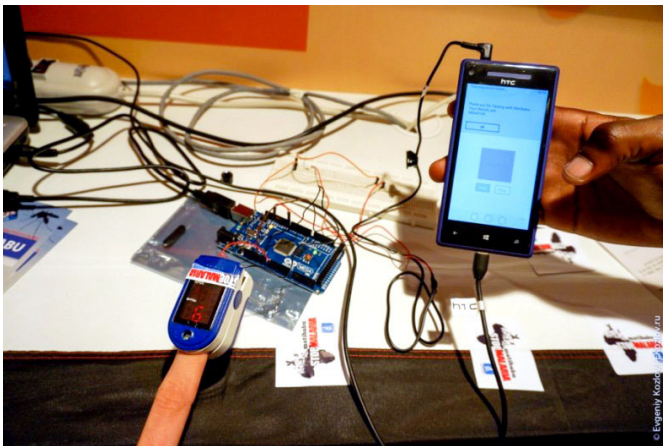
RESILIENTAFRICA NETWORK (RAN)

Innovation Projects under Incubation

ResilientAfrica Network (RAN) www.ranlab.org sources and supports Resilience Innovations at each of the 4 Resilience Innovation Labs (RI Labs) using three approaches: 1) **Resilience Innovation Challenges (RICs) Or Design Thinking Ideation:** - Guided by specific intervention pathways, we issue competitive calls for ideas. This targets new emerging ideas and is RAN's main approach to sourcing resilience innovations. 2) **Resilience Innovation Acceleration Program (RIAP) Or Crowd-Sourcing:** This is RAN's alternative source of innovations targeting existing projects with a potential to impact on resilience. 3) **Collaborative Resilience Innovation Design (CRID)** – Innovation project co-creation, Experts sit with community members to co-create system-level 'platform' projects.

First Round of Projects selected for support under the RAN Innovation Acceleration Program (RIAP) under the Eastern Africa Resilience Innovation Lab

1. **Matibabu:** A non-invasive technology for Malaria diagnosis (**Team:** Brian Gitta, Email: gittabrian@gmail.com, Tel: +256704319257; Joshua Businge, Josiah Kavuma)



Matibabu is a pocket-sized hardware device that uses a beam of red-light to detect malaria parasites in blood tissues. The technology is simple to use, non-invasive, low cost and does not require blood drawing devices making it viable in primary care settings in hard-to-reach areas where the microscope is not accessible.

2. **Root IO: A community radio technology with the potential to revolutionize last-mile communication** (**Team:** Jude Mukundane - judemukundane@gmail.com; Tel: +256718451574, Chris Csikzentmihalyi - robotic@gmail.com; Moses Odokonyero, modokonyero@gmail.com, Tel: 0784 762 284)



Root IO is a technology that combines radio technology and the reach of mobile phone coverage to transmit radio-signals in the community. The mobile phone handset quickly becomes a radio transmitter when attached to a portable hardware set. This implies that a radio station can be set up in any community anywhere, and the same station can be re-deployed to different communities in a very short period of time. Community leaders then have a more robust tool that they use in community mobilisation to address development challenges. A prototype of this technology has been tested and optimised in low income communities. With carefully selected and prepared content, the technology has the potential to transform last mile communication in various communities especially information related to disaster preparedness and response, peace building and mobilisation for social change.

3. **Earthworm Domestication: Unearthing the potential of earthworms:** (**Team:** Fred Kabi; Email: fred.kabi@gmail.com; Tel: +256772657155, John Okiror, Abas Kigozi)



Earthworm Domestication is a unique method of breeding earth-worms locally and processing them as an alternative feed to poultry. The challenge has been, producing earthworms in high required volumes enough to compete with the silver-fish market. Innovators are refining a

breeding unit to rapidly produce large masses of Earth worms under a controlled environment using bio-mass waste as the substrate. Communities can then use local technology to process the earthworms into a form that can be mixed with chicken feed as a protein source.

4. Low cost Solar Irrigation Pump: Transforming agriculture in semi-arid sun-rich area (Team: Etunganan Jacob; Email: jacobetunganan@yahoo.com; Tel: +256712675730; Ojara Peter; Prof. Byaruhanga Joseph)



Innovators have developed a prototype for a very-low-cost solar powered irrigation pump that is cast from local scrap materials. This pump has the potential to substantially increase access to low cost solutions for local irrigation and water transfer for other purposes. The team is also testing mechanisms for longer distance delivery systems to transmit water over longer distances through serial reservoirs. This technology has the power to transform social attitudes and perceptions about irrigation as a means to increased crop yields in sub-Saharan Africa.

5. Improved Pull and Push: An innovative approach to inter-cropping that dually suppresses nuisance weeds and pests. (Team: Wanyama Oduori Kenneth - wanyama.kenneth8@gmail.com; Tel: +256774091761, Mugondi Kapel Jerome)



Innovators have piloted a dual strategy for inter-cropping that achieves optimum control of the nuisance Striga weed and a prominent weevil (the Maize stock-borer) in a near natural ecosystem (Improved push-and-pull) which has shown excellent results leading to thriving maize gardens. Both the weed and the weevil are highly prevalent in the low lying maize producing areas of Eastern Africa, especially where the soils are fertile. This approach to cropping can be extended to larger holdings, helping to increase crop yield without additional expenditure on chemicals and the excess labour needs of weeding.

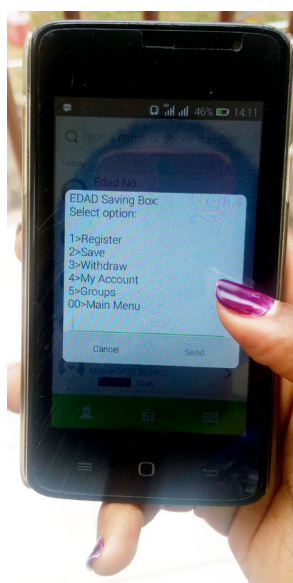
Second Round of Projects selected for support under the Resilience Innovation Challenge for Adverse Climate Effects (RIC4ACE) under the Eastern Africa Resilience Innovation Lab

1. 'KUNGULA' - Thresh IT (Team: Stephen Ssekanyo - sekanstephen@gmail.com, Pidson Abaho and Samalie Nakaggwe)



'KUNGULA' – Thresh IT; is an optimized post-harvest handling low cost technology for mechanized threshing and winnowing of maize. 'Kungula' is a local term meaning 'harvest'. The solution includes a mechanized thresher targeting large scale growers and a low-cost manual thresher for small scale farmers. The unit processes includes a winnowing fan that subsequently increases the quality of the maize grain. This thresher differs from other existing machines on the market because it incorporates a centrifugal winnowing fan that protects maize grain from external contaminants, releasing out chaff and dust from the final grain.

2. Electronic Dollar a Day (EDAD) - 'The Wonder Savings Box' (Team: Eng. Daniel K. Byamukama, byam033@hotmail.com) Mr. Paul Bakaki, Mr. Emmanuel Lule, Ms. Diana Nakiyingi)



eDAD E-Payments Select Action:

1. Open Saving Box
2. Save
3. Withdraw
4. Make Payments
5. My Account
6. Group saving
7. Future Security

EDAD, the "wonder savings box" taps into the rising access to mobile phones to create an electronic platform that will disrupt current approaches to saving. This mobile application comprises an electronic feature which separates and directs some of the mobile money in the user's mobile wallet to a virtual saving box within the mobile phone system. The saving

box feature will be activated individually or as a group, by dialling a special 3-digit number known as USSD code to reveal a fully interactive menu on the user's phone screen enabling the user to save, check balance, withdraw and even view a mini-statement from anywhere, anytime.

3. Rapid Solar Dryer (Team: Dr. Robinah Kulabako, Dr. Philip Nyenje, Mr. Swaib Semiyaga, Mr. Mohammed Ssemwanga)

RAPID is based on the idea of concentrating more solar energy in a controlled environment to achieve faster and efficient drying of a wide range of agricultural produce using locally available and cheap materials. The technology harnesses and concentrates solar energy using reflectors to quicken and improve the drying process. Reflective panels (concave mirrors), are placed at an appropriate solar angle and direction in order to concentrate extra solar radiation thereby providing extra solar heat to the system. The panels are adjustable so as to be positioned according to the sun's strength and movement, while offsetting excessive solar heat and prohibiting over-drying.

4. Mushrooming Livelihoods: (Team Mr. Gerald Kyeyune Muwanga, Dr. John James Okiror, Mr. Katende Stephen Sserunjogi, Mr. Muhereza Begumya David, Mr. Mivule Danson, Mr. Kigonya Allan, Mr. Mbowa Lutimba)



Growing of high value crops like mushrooms on smaller holdings will provide an important livelihood option for rural farmers. Mushrooms are not widely grown in Eastern Africa yet are of high demand in hotels, hospitals and homes. One of the key barriers to mushroom growing in the region is the requirement to use cotton-seed hulls as the medium for germinating and growing the mushroom plant. In addition, the cotton-seed hulls have to be sterilized, which is often done by roasting with firewood, yet it is increasingly scarce and greatly affects the environment. This project proposes to explore and develop a new medium for mushroom growing using crop residues that are locally available in the target communities, instead of cotton seed-hulls. In addition, the project proposes to explore new methods of sterilizing the crop-residues - instead of relying on firewood. Plenty of these crop-residue materials are available on farm without significant alternative uses. Secondly, use of soap and water will be employed as an alternative low cost sterilizing method.

5. B2K! Back to Millet: (Team: Dr. Julius Gatune, Dr Deborah Cohen, Ms Patience Kikoni, George Wanjohi, Zainab Kangale)

Traditional cereals and tubers like millet, sorghum, sweet potatoes, cassava and yams are slowly disappearing from the staple diets of many communities in rural Africa and beyond. Maize and rice have come up to claim a growing share of the dinner serving of many households. This is part of a globalization trend in which corn/maize and rice are



becoming a global staple food. Yet some traditional starches would provide similar aesthetic and dietary properties to rice and maize, while enabling a wider choice for consumers. This project uses novel recipes and aesthetics to re-define the taste of millet and other waning traditional starches like Sorghum, Cassava and Sweet potatoes. New forms of processing, impurity removal, mixing, refinement and presentation of these foods will increase their palatability and taste, so that more people in rural and urban settings choose to consume them. We have very simple formulations that can be scaled to the large quantities required to compete with maize, employing the existing unit processes used to process these cereals.

6. Village Egg Bank in Egg Currency (VEBEC) (Team: Mr. Swaib Dragule- Email: dragule@gmail.com, Imran Ejotre, Acaga Taban Ismail, Feni Gard)

One of the barriers to saving among small holder farmers in rural areas is the lack of monetary currency to spur savings. This is because their small volumes of produce often attract small amounts of monetary gain. VEBEC introduces a new unconventional form of currency in which farmers contribute 'an egg at a time' into a village egg bank. Any farmer can contribute, regardless of whether they have one or several chicken. These regular deposits of eggs will ensure a constant supply, while the egg pool will provide a mechanism for bulking the available eggs for better market leverage. The egg bank will record each household's contribution whenever an egg or more are delivered. The bank sells the eggs on behalf of the farmers, and earnings are deposited on an individual or group account opened at a commercial bank. The bulked eggs will provide formidable leverage in attracting buyers who are interested in bulk purchases while leveraging a good price for the farmers.

7. Better Farming Better Me! (Team: Dr. Posity Mugenyi, Dr. Gudura Basaza, Mr. Daniel Kadobera, Ms. Jennifer Kalule Musamba and Ms. Kellen Namusisi Nyamurungi - blessedjk@gmail.com, kalulej@ctc-africa.org)

This innovation reduces household dependency on tobacco by enhancing farmers abilities to generate adequate food, and create a fora where public health and poverty eradication programmes can be promoted and scaled up. The intervention is implemented by the Centre for Tobacco Control in Africa (CTCA) in partnership with Gudie Leisure Farm. The intervention involves introducing Kroiler chicken and high yield maize as alternative enterprises to tobacco growing under the theme 'Diversification of Income for Improved Life for tobacco dependent communities in Uganda'. The innovation will use chicken litter as manure for maize gardens and maize bran as chicken feed hence promoting a well-balanced ecosystem as well as synergy between the two enterprises.

Projects selected for support under the Resilience Innovation Challenge for Food Security and Improved Income Generation (RIC4FIG) under the Southern Africa Resilience Innovation Lab

- 1. Trust Insects For Food (TIFF):** Team: Dr. Luke Mehlo, Prof. Bongani Ndimba; Mr. CobusKotze; Dr. Nemer Shargie; Temothuo Co-operative - <http://www.csir.co.za>

The project seeks to develop an “out-of-the-box” farming system, commercially producing grain sorghum and development of enterprise value chains from a single crop. Sorghum is the most ideal foundation of the innovation. Its adaptability to harsh conditions is a plus in efforts for combating climate change and ensuring food security. The sorghum crop and this project will be a vehicle for the inclusive participation of resource poor communities in agriculture because it is among the few crops that can be grown without sophisticated knowledge and irrigation in areas receiving 700 mm or less of summer rainfall.

- 2. “Food Security for Every Family”:** Team: Christopher Adare. Joseph Monosile, Bernadetta Adare,

The project seeks to introduce technology and farm management methods that will provide a means to grow food and earn income throughout the year. The target population is small-scale irrigation farmers and fabricators in Chikwawa district.

- 3. Baobab fruit for dollars in Beitbridge (B4D):** Team: Dr. Alice Maredza atadzei@gmail.com, Killian Mutiro, Ms D Shumba, Ms V Sibanda,, Ms S Kurebgaseka and A Muchawona,

The project seeks to diversify and increase household incomes and employment in Beitbridge through value addition on natural forestry products using baobab fruit as a test case. Natural forestry product value chains provide immense potential for diversifying and increasing rural incomes if the communities are capacitated to undertake processing, value addition and brand development for the products.

- 4. Goats Value Chain for Prosperity (G4P)**

Team: Doreen Mnyulwa – Regional Agricultural and Environmental Innovations Network-Africa (RAEIN- Africa), Christo Venter, Ben Smit, Dr D.B. Afful and E.M Lestaolo - <http://raein-africa.org/>

The project seeks to develop a profitable goat value chain involving; goat and milk production, cheese processing and goat milk and cheese advertising and marketing business in Digkale community. The project activities seek to address challenges associated with limited opportunities for income generation in the local economy, low incomes for rural smallholder farmers and food insecurity. Primary beneficiaries will be the communal goat producers willing to run small to medium scale milk production, processing and marketing enterprises.

- 5. Mobile Solutions for Marginalized Communities (MOSMAC):** Innovator: Leon Gwaka

The major aim is to introduce farmers, especially in marginalised areas, to Information Communication and Technology (ICT)

and e-business for improved income generation and food security at household level. This will be achieved through improved knowledge of small scale farmers and community members that will be facilitated by the dissemination of information through mobile phones. The project will also be critical in improving current communication infrastructure within Beitbridge.

- 6. Mopane Worm for Nutrition and Income Generation in Zimbabwe (MW4NIG) :** Team: Dr. Prosper Matondi, Dr Easther Chigumira, Sheila Chikulo, Aaron Marufu, Chipso Gono, Wilbert Marimira - Ruzivo Trust: <http://www.ruzivo.co.zw/>

The project seeks to facilitate training and capacity strengthening to increase Mopane worm productivity. Group formation and dynamics will be achieved through facilitation by the experts in the team developing a training curriculum at multiple levels that includes: developing manuals for group formation, technical production processes on Mopane worms, conservation of the natural habitat, health and safety of harvesters and collaboration with institutional actors.

- 7. Improved life and entrepreneurial skills through the self-help group approach:** Team: Xolile Manyoni , Nokulunga Khumalo and Phil Donnell Sinmandla: <http://www.sinamandla.org.za/>

The SHG project strengthens resilience through food security, improved lifeskills, entrepreneurial skills development, livelihood diversification and community initiatives with joint ownership. The proposed project will be implemented through the establishment of SHGs in Pyramid and Ga-Dikgale by local NGOs who will be capacitated and supported by Sinamandla.

Projects selected for support under the RAN Innovation Acceleration Program (RIAP) under the Horn of Africa Resilience Innovation Lab

Innovative Rainwater harvesting Technology to improve access to safe water in borana zone,

Ethiopia: Team: Alemayehu Haddis ahad12@yahoo.com and Esayas Alemayehu

The project involves designing and constructing an improved, low cost and sustainable rain water collection cistern at selected plots in Arero. The water tank capacity to be built underground will be estimated from the number of dry seasons, family size and the per capita water consumption. Naturally growing grass is intended to be used as a filter media. The catchment surface is cultivated with grass that will be used as animal feed. It uses local filter like grass stones and gravel to improve the quality of rainwater hence minimizing cost but at the same time giving the best quality of water. It is designed to avoid multiplication of mosquitoes that transmit malaria. Contact of mosquitoes in the collected water is prevented by applying mesh wire on top of the pond. An oval dome like shape is created on top of the reservoir by using iron bars to support the mesh. Water loss due to evaporation is prevented by applying thatched roof over the pond and water loss due to percolation is minimized by applying plastic sheets or concrete in the collection reservoir.

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Full Profiles accessed at www.ranlab.org

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