

D4D

PRIZE | Digital for Development



Abstract Book

Innovation fair & Awards ceremony
- October, 4 2018 -

PRIZE “DIGITAL FOR DEVELOPMENT (D4D)”

INNOVATION FAIR & AWARDS CEREMONY

- OCTOBER, 4 2018 -

INTRODUCTION	1
KEYNOTE PRESENTATIONS	3
<i>Farmers benefit from digitalisation</i>	5
<i>Tech for Development: revolution or evolution?</i>	6
<i>Coached Blended e-Learning: 2 projects to increase skills in Africa</i>	7
<i>Unify to setup first African UTM in Malawi drone test corridor with Unicef</i>	8
<i>Blockchain for Education</i>	9
INNOVATION FAIR	11
AKSANTIMED	13
CLOSE THE GAP INTERNATIONAL	14
E-HEALTH ACADEMY	15
ENABEL	16
ENTREPRENEURS FOR ENTREPRENEURS (OVO)	17
KYTABU COMPANY LTD	18
SOLARLY	19
VLIR-UOS	20
ROYAL MUSEUM FOR CENTRAL AFRICA	21
NOMINATED PROJECTS FOR THE PRIZE D4D	23
CATEGORY ‘ISTANDOUT’	23
ACCESS AGRICULTURE – Overcoming the language barrier	25
CERHIS – Connected Electronic Records – Hospital Information System	26
GEOMONITORING OF SAVINGS GROUPS IN MAASAI RURAL AREAS	27
USING MACHINE LEARNING TO ANALYSE RADIO CONTENT IN UGANDA	28
CATEGORY ‘ISTARTUP’	29
SMART GLASSES	31
WIKITROPICA	32
WISEPOCKET	33
CATEGORY ‘ICHOOSE’	35
DEVELOPING IOT SENSORS FOR BENIN	37
EIGHT	38
THE GEO-OBSERVER NETWORK	39
ACKNOWLEDGEMENTS	41

INTRODUCTION

Prize “Digital for Development (D4D)” rewards outstanding initiatives that use digitisation and (new) technologies as a lever for development towards achieving the Sustainable Development Goals (SDGs).

Organized for the first time in 2016, Prize D4D is a biennially initiative of the Royal Museum for Central Africa (RMCA) with the support of the Belgian Directorate-General for Development Cooperation and Humanitarian Aid (DGD).

Prize D4D rewards one laureate for each category:

- the success story – ‘iStandOut’;
- the innovative idea / startup – ‘iStartUp’;
- the public award – ‘iChoose’.

The jury has nominated 4 initiatives from the category ‘iStandOut’ and 3 initiatives from the category ‘iStartUp’. In the category ‘iChoose’ the public has voted online for her/his favourite candidate. Laureates from each of those 3 categories will be awarded a prize during the awards ceremony on October the 4th 2018 at the Colonial Palace in Tervuren.

KEYNOTE PRESENTATIONS

Farmers benefit from digitalisation

Christopher Addison, Technical Centre for Agriculture and Rural Cooperation (CTA)

Hannelore Beerlandt, Chief Executive Officer, AgriCord

Theme D4D

Digitalisation for Smallholders

Summary of the keynote presentation

The speakers will describe cases drawn from their work together on digitalisation where farmers have benefitted from digitalisation. For example in Uganda, tea farmers, have benefitted from improved fertilizer inputs and access to credit based on farmer digital registration and mapping of their land. Coffee growers in Nucafe have secured new markets through digitalisation of their profiles. In Lesotho and Swaziland, farmers' organisations have used digitalisation to work for the benefit of their members with government on subsidy programmes. The East African Farmers Federation (EAFF) with their mobile application and digital service e-granary has found buyers for their farmers produce by securing a better supply based on better yield forecasts. They are working with local governments on food security issues, using data shared by their members on yields. They have also used farmers data to provide insurance for the benefit of their members.

Applications range in scale from the TRIAS key work on geomonitoring saving groups in Masai rural areas to work looking at the use and application of blockchain being undertaken.

The speakers will also talk about how they use their project with the Pan African Farmers Organisation and their networks for up-scaling up successful digitalisation approaches, the importance of capacity development particularly in transforming farmers organisations into successful businesses and the need for good Monitoring & Evaluation.

The take home message is that there are a myriad of opportunities for the farmer in digitalisation. These digital services based on sharing data can provide access to finance, insurance, new markets and extension.

Tech for Development: revolution or evolution?

Olivier Vanden Eynde

Founder & CEO of **Close the Gap International**

Theme D4D

How Digital enabled services can alleviate poverty : Tech Entrepreneurship and circular economy

Summary of the keynote presentation

True to its mission to bridge the digital divide in developing and emerging countries to make impact, Close the Gap has been launching and experiencing with many different initiatives to respond to rising Sub-Sahara-Africa's needs.

For nearly 15 years now, Close the Gap has been able to reach over 3 million unique users through its network of reliable partners and donors.

Olivier Vanden Eynde, founder & CEO of Close the Gap, will explain his vision of tech for development and how the needs in Africa have evolved over the years. He will demonstrate how Close the Gap, as a social enterprise, has transformed itself to respond to the evolving demands of not only ICT hardware and access to the internet and e-literacy, but also of support in tech entrepreneurship and e-waste recycling. A story about a box-mover organization, that suddenly starts filling the boxes with 'solutions' while moving them.

Coached Blended e-Learning: 2 projects to increase skills in Africa

Rik Vanden Berk

Summary of the keynote presentation

As an engineer and frequently involved in the learning processes inside the large-scale industry, I will explain my vision on how basic skills (of trainers, instructors, teachers and professors, specialists and engineers) can be upgraded by using multimedia and sophisticated learning methods. The upgraded specialists can use their knowledge and skills in a better way in Africa, but also for migration or circular migration.

The 2 learning projects are based on guiding and blended learning in which the coaching aspect has a large share.

The first learning process is the one with knowledge providers who are willing to share their knowledge with knowledge seekers by means of the internet. The provider is offered a separate lesson on how to transfer knowledge by evaluating and coaching.

The second project is a network of learning units operating in a cascade system from continental, national, regional to local level. Local students (at technical schools and universities) deal with a specific learning methodology, in which the acquired knowledge is permanently evaluated by the coach. This form of blended learning is also extremely suitable for forming entrepreneurs outside their daily business activities.

These projects were presented and commented in a panel discussion at the 13th edition of eLearning Africa Conference that took place from September 26-28 in Kigali (Rwanda).

Unifly to setup first African UTM in Malawi drone test corridor with Unicef

Jürgen Verstaen

Chief Business Development Officer en Co-Founder of **Unifly**

Summary of the keynote presentation

On 29 June 2017 the Government of Malawi and UNICEF launched an air corridor to test potential humanitarian use of Unmanned Aerial Vehicles (UAVs), also known as drones. Unifly supported Unicef with the setup of an Unmanned Traffic Management System for the drone corridor.

The UTM system is important so that companies are able to do BVLOS (*Beyond Visual Line of Sight*) test flights in the drone corridor.

The presentation will cover some of the challenges that were encountered during the setup of the UTM system at the drone corridor.

Blockchain for Education

Els Meyvaert

MarCom Director van **SettleMint**

Summary of the keynote presentation

VIA Don Bosco, SettleMint and HOWEST want to make the spending of funds for development cooperation more effective, more efficient, more transparent and insensitive to fraud through the use of Blockchain technology. VIA Don Bosco invests approximately 9 million euros annually in education and employment in Africa and Latin America. About half of these funds come from the Belgian government. The other half comes from donations from individuals, companies or foundations. VIA Don Bosco wants to use these resources as effectively and efficiently as possible to optimize their impact. Proper monitoring and reporting of these funds is a challenge for all NGOs. When you work in poor and fragile states, you are often confronted with corruption and fraud. VIA Don Bosco has already made great efforts to avoid all possible problems: from a careful screening process of their partners to the elaboration of extensive financial monitoring processes. VIA Don Bosco wants to use every penny for the purpose for which it was donated. Unfortunately, these processes are also very time-consuming. Approximately 40% of all human resources in Brussels go here and this also requires a great deal of effort from the partners. Process analysis shows that too much time goes to administrative matters instead of management of the funds. And unfortunately, despite all efforts, the system remains vulnerable to people with bad intentions.

SettleMint, Howest and VIA Don Bosco believe that there is a solution to this problem: blockchain technology. This can not only disable the fraudulent use of funds, but also offers considerable opportunities for process optimization.

The project aims at 2 primary objectives:

- Increasing the efficiency and effectiveness of our international financial management;
- Increasing the transparency of the financial processes, both to internal and external stakeholders.

INNOVATION FAIR

AKSANTIMED

CLOSE THE GAP INTERNATIONAL

E-HEALTH ACADEMY

ENABEL

ENTREPRENEURS FOR ENTREPRENEURS (OVO)

INSTITUTE OF TROPICAL MEDICINE

KYTABU COMPANY LTD

SOLARLY

VLIR-UOS

ROYAL MUSEUM FOR CENTRAL AFRICA

PRIZE D4D

AKSANTIMED

Hélène Mavar
Serge Mbela-Sedi

Target groups

- General public
- Medical professionals (doctors, pharmacists, importers and wholesalers of medicines)

Theme D4D

eHealth: fight against proliferation of fake medicines and peripheral services to the medical professionals (database, drug interactions, health mapping, reporting, alerting service...)

Objective

To enable the patient to use the medicine safely.

Description

AksantiMed uses digital means to enable the patients to use the medicine safely. With a SMS or through the AksantiMed App, the patient can validate the 12-digit unique code on each medicine package. Validating this code, he/she receives instantly some information linked to the product (type, commercial name, expiration date, health alert,...)

AksantiMed is currently in a test phase (Beta version) in Kinshasa (DRC).

AksantiMed received a favourable response from the general public and also from public authorities that want to improve the medicines purchase process of the general public.

To support this project, AKSANTINET sarl has been created in DRC and it is composed of computer specialists and medical professionals (doctors and pharmacists).

The project was awarded as the winner of the Prize D4D 2016 (category iStartUp) and received a coaching by imec during the start-up phase.

CLOSE THE GAP INTERNATIONAL

Julie de Bergeyck (D4D-Be Project Manager)
Didier Appels (Strategic Partnerships)

Target groups

Interested D4D stakeholders

Theme D4D

D4D-Be platform (Kindling.be), IT access, e-literacy, tech entrepreneurship & innovation, e-waste recycling

Description

Close the Gap is an international social enterprise that aims to bridge the digital divide by offering high quality, pre-owned computers donated by large and medium-sized corporations or public organisations to educational, medical, entrepreneurial and social projects in developing and emerging countries. All the projects are demand-driven and non-profit oriented initiatives. Since 2004, Close the Gap has gathered over 700.000 ICT assets, has contributed to over 5.000 projects in more than 50 countries (mostly in Africa) and reached more than 3.000.000 beneficiaries.

Close the Gap also powers Worldloop (sustainable e-waste recycling), the Leap2 programme (supporting local entrepreneurship and innovation), and the Digital for Development platform (Kindling.be), all contributing to creating impact in Africa and other developing countries.

Close-the-gap.org

Kindling.be

E-HEALTH ACADEMY

Working group digital health @ Be-cause health platform

Tim Roosen, Institute for Tropical Medicine / Be-cause health platform coordinator

Target groups

Belgian development actors implementing health programs including ngo's, Belgian Technical Cooperation Agency ENABEL, academics, research centres and private companies

Theme D4D

E-Health Academy - E-Health for Development

Objective

Open and informal reflection and exchanges on digitalization and health cooperation – a Belgian toolbox - held within the Belgian Platform International Health - Be-cause health.

- Informal exchange of digital for health innovations and trends;
- Informal exchange and presentation of recent research and/ or digital tools in development;
- Peer exchange amongst implementers, researchers and product developers (companies) to examine concrete digital applications and 'tools';

Knowledge and experiences shared include the use of (big) data and (smart) software a.o. for hospital management, data analysis and health diagnostics, digital tools supporting health professionals, smart health centres, etc.

Description

The informal open group brings together implementing organisations (ngo's, development agency, ..) health experts, consultants, researchers and product developers.

The informal exchange has so far looked at the following topics:

Opening session – Digital Health in Global Health (Blue Square) @ E-Health for Development - A closer look at the Belgian toolbox, Workshop Nov. 2016

Excellensis: Presentation by Georges Ziant +: Has She Access? Data visualization project - Bluesquare, Workshop Dec. 2017

Landscaping digital tools for nurses In low income settings, April 2018

DHIS2 Training – Bluesquare + OpenClinic – VUB +

Smart Community Life Centers – Philips healthcare Africa, Anais Digital, Flow Pilots Workshop June 2017

ENABEL

Eric Gamache
Arnaud Leclercq
Bart Cornille

Target groups

14 partnercountries Enabel

Theme D4D

Human Rights Based Approach, FinTech, AgriTech, E-Health, Ed-tech,...

Objective

Enabel is the Belgian development agency. Our mission is to implement and coordinate the Belgian international development policy.

Description

We help our partners find digital solutions and we assist them in applying the latest technologies. Simple digital tools (e.g. mobile data collection) as well as advanced technologies (sensors, digital imaging..) are used for monitoring, steering, sound decision making and better development results.

Through the Wehubit programme, we fund digital initiatives originating within the private sector, non-profit organisations or the public sector in the partner countries of the Belgian Development Cooperation. Wehubit supports scaling-up and replication of 'Digital for Development' initiatives via grants, loans and equities. Projects which have proven to be successful and which want to move onto a next stage can apply for additional financial support. Calls for proposals are regularly launched on the Wehubit website.

Digitalisation is not a goal by itself, but a catalyst for development. All our actions are in line with the 'Digital for Development' policy paper of the Belgian Development Cooperation and we endorse the nine Principles for Digital Development.

ENTREPRENEURS FOR ENTREPRENEURS (OVO)

Luc Blyaert, Communication expert for Ondernemers voor Ondernemers (OVO)

Theme D4D

Sustainable Technology for Africa

Objective

Supporting entrepreneurship in Africa for start-ups and scale-ups in the form of knowledge transfer from entrepreneurs and social loans.

Description

Entrepreneurs for Entrepreneurs (OVO) is a not for profit organization that is convinced that stimulating entrepreneurship in low and middle income countries has a strong social impact as well as an economic one. Cooperation and partnership with major stakeholders in this ecosystem are vital. Which is why the 'Sustainable Technology for Africa' program was launched at the end of 2017, in collaboration with VITO and Thomas More University College among others. In this program African entrepreneurs are coached for a week and where possible are included in the OVO investment portfolio.

In 2018 the OVO Acceleration Fund was set up in collaboration with the King Baudouin Foundation to provide assistance to entrepreneurs from low and middle income countries, who have difficulty in tapping into the financial market, in the form of a social loan. Coaching and knowledge transfer remain paramount.

KYTABU COMPANY LTD

Joy Mirembe Wojiambo (Kytabu's head of projects)
Paul Mugambi (Kytabu's CEO)

Target groups

Primary and high school students, teachers, parents and schools

Theme D4D

e-Education

Objective

- 1) To democratize education through increased access to education content.
- 2) To make education content affordable to our users by leasing bite-sized content.
- 3) To create user specific learning paths.

Description

Kytabu is a digital education content creation company in Kenya, providing engaging and interactive content on hand-held devices.

The cost of education currently accounts for more than 45% of an average family's income in Kenya and many parents having to bulk-buy all the required curriculum textbooks and learning materials, this constitutes about 50% of the spend on education.

With very limited access to textbooks, teachers and poor school infrastructures and the limited longevity of paperback textbooks, these only add to the difficulty of getting effective learning outcomes for the 15 million students in primary and secondary school in Kenya. Kytabu has come in to bridge this gap by providing the content needed by students at a very affordable price and an easily accessible way not limited to one's geographical location in the country.

Kytabu, meaning "book" in Swahili, allows students and their families to securely access and rent portions of required reading materials for a specific amount of time on a mobile platform. Reading material can be purchased for a set period of time by page, by chapter, or in its entirety for a fraction of what it would cost to buy a complete printed textbook.

SOLARLY

Jean-Grégoire Orban de Xivry
Julien Riat
David Oren

Objective

Support the development of remote areas of Sub-Saharan Africa that do not have access to electricity.

Description

Solarly is a Belgian company, which develops connected, autonomous and upgradable solar solutions for rural populations in Sub-Saharan Africa.

Our solutions have been developed to enable its users to develop income-generating activities (e.g.: telephone charging point, computer centre, opening of a bar/store, hairdresser's salon, etc.)

Connectivity with all our solar solutions allows us to:

- 1) Remote monitoring of Solarly installations (visualize production, consumption, what is stored,...),
- 2) Make remote updates and the possibility of blocking the solar station in case of non-payment,
- 3) Offer instalment payments via mobile payments to facilitate the acquisition of Solarly solar solutions, without hurting users' finances,
- 4) Offer an after-sales service: maintenance, support in the creation of income-generating activities,...

Solarly also offers training on solar energy to local actors, who are in charge of the installation and maintenance of our solar installations.

VLIR-UOS

Christophe Goossens

Target groups

All partners interested in cooperating with Higher Education Institutions

Theme D4D

Digital for research and education

Objective

VLIR-UOS supports partnerships between universities and university colleges, in Flanders and in the South, looking for innovative responses to global and local challenges. We do this by:

- facilitating and stimulating cooperation projects between professors, researchers and teachers
- giving scholarships to students and professionals in Flanders and the South
- supporting and strengthening higher education in the South as well as global development-based internationalisation of higher education in Flanders.

Description

Information and communication technologies (ICT) can greatly improve the quality of both learning and teaching. Furthermore, they can significantly expand the reach of learning environments supported by such technologies in the context of university learning systems, which aim to educate students at the system's highest levels. ICT allows interaction and co-creation within the learning context and processes.

ICT can also play an increasingly important role in diminishing the transactional distance between partners involved in developing, managing, implementing and monitoring programmes and projects within interuniversity collaboration, such as VLIR-UOS projects. The learning takes place at the organisational level, where it results in improving the implementation and management of projects.

Moreover, during the implementation phase, VLIR-UOS asks its projects to report on D4D. As presented in the Strategic Policy Note on 'Digital for Development' (D4D) for the Belgian development cooperation, three action areas are brought forward :

- **Better use of (big) data:** a vast majority of VLIR-UOS interventions are data- driven. Big data volumes are therefore collected and analysed in innovative ways, producing actionable insights for Higher Education Institutes and development actors. Open data can be useful to all stakeholders in society.
- **Digital for inclusion:** VLIR-UOS interventions work on narrowing the digital divide for academic staff and students on the one hand and on the digitalisation of higher education (e.g. e-learning, digital student management, ...) on the other.
- **Digital for inclusive and sustainable economic growth:** within its scope of service to society, impact and sustainability policies and through digitisation and digitalisation, VLIR-UOS aims to increase employment and social protection. Labor markets and private sector development are also further connected to the educational/training sector.

D4D is not only about ICT infrastructure though, but also about energy (electricity), skills and expertise, good governance and leadership, and tools (platforms).

ROYAL MUSEUM FOR CENTRAL AFRICA

Target groups

African institutions, researchers, and students and the public

Theme D4D

Digital access to digital knowledge and collections; distance learning tools; sharing of digital information systems and sources

Objective

The RMCA's data and collections in the natural and human sciences are one-of-a-kind. They can be very useful when made accessible to scientists as well as non-experts internationally. Therefore, the museum provides access to knowledge and digitised collection information to African institutions, researchers, and students and the public.

Description

Contributing to Africa's sustainable development is one of the missions of the Royal Museum for Central Africa (RMCA). A significant part of its activities is aimed at promoting development cooperation, towards which the RMCA can use its scientific expertise, very rich collections, documentation, and infrastructure to advantage.

The museum's main partner in development cooperation is the Belgian Development Cooperation (DGD). Activities are varied and are directed at:

- transferring knowledge about Africa and development issues, through dissemination of digital information, through educational workshops for schools, exhibitions for the general public in Belgium, and international conferences for academics and professionals.
- implementing research projects in a wide range of disciplines (zoology, wood biology, geology, history, musicology) with partner institutes mostly in Central Africa. For example, long term collaboration projects work towards prediction and monitoring of geological hazards, towards integrated fruit fly pest management and towards sustainable management of forests and fish resources in the Congo Basin.
- reinforcing the capacities of African institutions through cooperation projects, training for African scientists, and sharing of digital information systems and sources.

The following activities in the frame of D4D can be highlighted:

- FishBase is the largest online fish encyclopedia. As partner of this international network, the museum delivers and focuses on information about African fishes (www.fishbase.org and www.fishbaseforafrica.org).
- The RMCA is developing visual identification keys for non-experts: for example in a set of multi-entry keys on economically important African fruit flies and hover flies (<https://fruitflykeys.africamuseum.be>).
- Distance learning tools are developed : for example the free on-line Field Manual for African Archaeology (<http://www.africamuseum.be/research/publications>)
- In the earth sciences, the archives of the RMCA and those of African partner institutes are valorized in order to develop an on-line, open source geocatalogue for geodata consultation.
- With the support of DGD and BELSPO, a network of measurement stations (earthquake, landslide and volcanic hazards) in Central Africa is developed to monitor natural risks in order to protect the nearby living population. This digital information is used and shared broadly.

**NOMINATED PROJECTS FOR THE PRIZE D4D
CATEGORY 'STANDOUT'**

ACCESS AGRICULTURE – Overcoming the language barrier

Paul Van Mele (Access Agriculture, Belgium)
Jonas Wanvoeke (Access Agriculture, Benin)

Countries involved

Benin, Mali, Egypt, Kenya, Malawi, Uganda, India, Bangladesh

Target groups

Farmers, extension agents, development organisations

Theme D4D

e-Agriculture

Objective

To promote innovations in sustainable agriculture and rural enterprises through capacity development and South-South exchange of quality farmer-to-farmer training videos in local languages.

Summary of the project

Many development projects train farmers. However, it is a challenge to valorise the experiences of trained farmers and to reach more farmers. Access Agriculture has addressed this by digitising past and on-going capacity building efforts. Rather than developing documentary videos for donors, Access Agriculture encourages the production, translation, distribution and use of farmer-to-farmer training videos to allow farmers across the globe to learn from those few farmers who were fortunate to receive hands-on training. Many farmers in developing countries do not speak English, French or Spanish. Access Agriculture has trained local partners how to produce well researched, scripted videos and how to translate scripts into local languages, enabling farmers to learn from their peers across the South in their own language. In the videos, inspirational, empowered farmers encourage in a step by step format other farmers to learn and experiment with sustainable agricultural technologies, natural resource management and food processing.

The Access Agriculture video platform (www.accessagriculture.org) hosts more than 180 videos in 75 languages, all freely downloadable. Local language videos are distributed by development organisations, extension services, rural radio stations and farmer organisations on micro SD cards, DVDs, preloaded phones, tablets, USB sticks, smart projectors (digital technology). Since 2012, over 170.000 people from more than 100 countries have used the Access Agriculture video platform. More than half of those downloading videos are farmers, who increasingly use their mobile phone to watch videos. Through TV stations, more than 4 million farmers have watched Access Agriculture videos. The innovative digital approach, technologies and partnerships used by Access Agriculture has enabled global access to quality training content in local languages and has transformed the lives of millions of farmers in Africa, Asia and Latin America.

CERHIS – Connected Electronic Records – Hospital Information System

AEDES (Belgium), MaisOrdi (DRC)

Country involved

Democratic Republic of the Congo

Target groups

Patients, as well as the staff of medical structures in low resources environments (district hospitals, health centers)

Theme D4D

e-Health

Objective

Improve the quality of the information collected in health structures to ensure better patient care, better management of the health structure and the efficient production of a reliable sanitary information.

Summary of the project

CERHIS is an information system adapted to health structures located in low resources environments. It works on Android tactile tablets and replaces the former paper-based files and records that are notoriously difficult to use, to preserve and to exploit.

With CERHIS, the staff uses an intuitive app to record medical and administrative patient data, thus creating an individual medical file with a patient history which can be shared within the medical team. The collected data are also aggregated automatically and anonymously processed to develop reliable sanitary statistics.

CERHIS is a complete solution that comprises software and hardware adapted to the conditions of limited resources environments. The implemented technologies, such as NoSQL, enable the use of the tablets even without Wi-Fi connection while ensuring later synchronization.

A specific protection closet contains the material and is powered by a mixed energy supply (solar panels, electrical grids and/or a generator), which enables the material to work even in the event of an electrical failure. The system is remotely monitored via text messages, without need of the internet. This allows fast interventions by local technicians in case of a problem. The system is dimensioned (number of tablets, closet...) to be adapted to the needs and the financial capacities of each health structure.

GEOMONITORING OF SAVINGS GROUPS IN MAASAI RURAL AREAS

Saitoti Kitasho (Trias East-Africa)
Bart Casier (Trias East-Africa)

Country involved

Tanzania

Target groups

Pastoralists, mainly Maasai women and youth, living in geographically widespread and remote areas in Northern Tanzania

Theme D4D

Digital management information systems and geomonitoring for inclusive and sustainable economic growth

Objective

The project aims to optimise the functioning of the Village Community Banks (VICOBAs) established by Trias and its member based organisations (MBOs) by the use of digital collection of dynamic real time data and the intensive use of (geographical) monitoring tools. This way, more than 7,000 poor and vulnerable women living in remote and isolated areas are (economically) empowered.

Summary of the project

Village Community Banks (VICOBAs) are a powerful tool to improve the livelihood of poor and, what are often called, the 'unbankable' people. These savings groups create the opportunity for members to jointly save money which is used to provide (business) loans to each other. The members also contribute to a social fund which serves as an informal insurance that members can access in cases of e.g. illness, death or other emergencies. Because of their economic and social function, VICOBAs have a positive trickle-down effect on other important development aspects like women empowerment, health and education. Once VICOBAs are functioning well, group members have access to other services offered by Trias and its partners such as entrepreneurship trainings to help the members strengthen their businesses.

In order to monitor about 350 saving groups, consisting largely of vulnerable Maasai women and youth who live in extreme poverty, Trias uses the combination of two powerful open source tools: the saving groups management information exchange system (SAVIX MIS) and quantum geographic information system (QGIS). The MIS allows Trias to collect and monitor data on the performance of the VICOBAs which are often located in remote areas. As such, the MIS and QGIS allow to analyse real time data, compare groups, follow trends, and visualize and cluster VICOBAs geographically. As a result, these analyses will identify patterns of the group performances and indicate the need for additional support which will improve the livelihood of the group members and their families.

USING MACHINE LEARNING TO ANALYSE RADIO CONTENT IN UGANDA

United Nations Pulse Lab Kampala

Country involved

Uganda

Target group

Population living in rural areas of Uganda

Theme D4D

Big Data

Objective

Analyse public radio content to close the gap between the population living in rural areas of Uganda and humanitarian and development practitioners. Make public radio content accessible for the SDGs and humanitarian action.

Summary of the project

In Uganda, where most of the population lives in rural areas, radio is a vibrant platform for public discussions, information sharing and news. Talk shows and phone-ins are popular ways for people to voice their needs, concerns and opinions. According to the Uganda Bureau of Statistics, 55% of households use radio as their main source of information.

The digital application developed by Pulse Lab Kampala allows closing the gap between population living in rural areas and humanitarian and development practitioners. Protecting people's privacy, opinions and testimonies expressed freely on the radio waves can be used to inform programmes and policies for the SDGs and humanitarian action.

The digital application is a worldwide innovation developed with artificial intelligence. The application allows data mining from public conversations in local Ugandan languages. Thanks to the application, public discussions about malaria, AIDs or service delivery can be extracted and analysed from hundreds of thousands of daily conversations.

The technology behind the digital application is unique because for the first-time automatic speech-to-text technology has been developed for African languages.

The Lab and partners tested the application in 2016 with pilot studies. These demonstrated the value of analysing public radio content for the SDGs and humanitarian action. The success of the pilots led to new partnerships with the Belgian Government and others to further develop the digital application. It also led to expand the analysis of public radio discussions on topics related to service delivery and to gauge public perceptions on the refugee influx in Uganda.

More information on the project can be found at:

-Analysing radio content : <https://radio.unglobalpulse.net/uganda/>

-Using machine learning to analyze radio content in Uganda:

<https://radio.unglobalpulse.net/uganda/case-studies/>

-Improving Public Service in Uganda with Radio Content Analysis :

https://radio.unglobalpulse.net/uganda/education_and_health/

-Bringing in People's Voices to Respond to a Refugee Crisis : <https://refugees.unglobalpulse.net/>

**NOMINATED PROJECTS FOR THE PRIZE D4D
CATEGORY 'iSTARTUP'**

SMART GLASSES

create access to affordable & quality essential health care services in remote areas in West Africa

Iristick and African Drive (1st pilot);
Iristick and Institute of Tropical Medicine (ITM), Antwerp (2nd pilot)

Countries involved

Benin (1st pilot), Guinea (2nd pilot)

Target groups

Healthcare providers and patients in remote areas

Theme D4D

e-Health: remote assistance of local health care workers in rural health centres or in the field;
Big Data: reliable collection of healthcare-related and other data

Objective

Making higher quality and more efficient patient care in rural healthcare centres accessible and affordable, both by providing online, real-time remote assistance by experts, as well as supporting hands free digital guidance during execution

Summary of the project

The first pilot concerns the local hospital Saint-Martin, Papané, Tchaourou, in Benin. During a first phase, the maintenance of (medical and other) equipment will be supported remotely by an experienced person in Leuven, Belgium, every time it breaks down. This should substantially increase the up-time of the equipment. In a later phase, once the local staff gets acquainted with this new technology, the smart glasses can help to provide higher quality and more reliable healthcare directly to patients, both by enabling the virtual presence of a remote medical expert as through the (hands free) guidance of the healthcare provider by digital instructions during execution.

After having gained insights during the first phase of the first pilot in Benin, a pilot in Guinea can be set up together with Prof. Dr. Wim Vandamme, Head Public Health ITM. This second pilot covers both 'remote medical assistance' as 'capturing health data in remote areas', and is a unique chance to further explore the capabilities of Iristick's technology.

Based on the learning of the 2 pilots, a scale-up program can be defined.

Potential connectivity problems (wireless connectivity, quality of image and sound) can be addressed together with Avanti Communications (UK). Avanti is a global player providing high speed broadband connectivity via satellites, also in remote areas in Sub-Saharan Africa.

WIKITROPICA

A collaborative platform for open information and education on tropical diseases

Channé Suy Lan, InSTEDD iLab Southeast Asia - Regional Lead
Jan Kennis, Steven van den Broucke, Maria Zolfo, Lut Lynen & Emmanuel Bottieau, Institute of Tropical Medicine, Antwerp

Countries involved

Ethiopia, Ecuador, Cambodia (in the startup phase)

Target groups

Healthcare practitioners around the world (doctors, nurses), students and teachers in courses related to tropical medicine. Other groups, such as community healthcare workers, media and the general public, will be able to use the resources on the platform but do not constitute the main target group.

Theme D4D

Better use of (big) data, digitalisation for inclusive societies
SDGs 3, 4, 16 and 17

Objective

WikiTropica aims to achieve a freely available collaborative knowledge management platform in the field of tropical medicine and international health, based on the contributions of experts worldwide.

Summary of the project

Introduction: Existing information websites in the field of tropical medicine are behind paywalls; have a narrow focus or are geared towards high income countries. Collaborative peer-reviewed information platforms and online learning deliver benefits to healthcare practitioners (HCPs), such as reduced diagnosis delays (Addison et al., 2012) and efficient continuous medical education (McCall et al., 2018).

Aim: We are presenting a concept for an innovative collaborative knowledge management platform “WikiTropica”. This concept is based upon experience with prior published information sources, an international survey and workshop. We aim to gather a network of experts worldwide to contribute online in a collaborative way to the content. Different types of information (images, texts, eLearning modules, case studies) will be integrated in a ‘glocal’ approach (global reach but localized contents targeted for use in low- and middle-income countries). Users need an openly accessible and easy to search system that adapts to their needs, including a (mobile-friendly) website and an App. Several challenges remain such as collaborative motivational mechanisms and localizations (both in term of language as well as differential diagnosis and availability of medicines). These challenges will be addressed through innovative implementation research and collaborations with the private sector e.g. on machine translation.

Conclusion: Concrete initiatives for open knowledge and open education in tropical diseases are rare today. There is both a need and an opportunity to provide easily accessible, high-quality information on tropical diseases to healthcare practitioners in low- and middle-income countries. The platform aims to be collaborative, agile, open and ‘glocal’.

WISEPOCKET

A mobile application for e-learning and wise communication

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Lic. Gilbert Mengana de la Fe (Universidad de Oriente- Cuba)
Ing. Mirtha Gil Rondón (Universidad de Oriente- Cuba)
Ing. Francisco Javier Deler O’Farril (Universidad de Oriente- Cuba)

Countries involved

Cuba

Target groups

- Health Care Ministries and Organizations (including NGO)
- Communities and public affected by communicable and noncommunicable diseases

Theme D4D

Digital for inclusive and sustainable economic growth

Objective

Our goal is to provide digital technology tools to Health Care Ministries and Organizations (including NGOs) to support care strategies in reaching, educating, motivating wellbeing, raising and heightening population’s awareness of communicable and noncommunicable diseases.

Summary of the project

Developing countries face an increasing incidence of noncommunicable diseases (NCD), even communicable disease remains a persistent threat that have globally shown increasing impact on health status in populations. Billions of developing countries residents still lack access to most fundamental aspects of health awareness, yet many of them can count mobile phones among their possessions. To reach these populations, a variety of health mobile apps (mHealth) for noncommunicable and communicable diseases have been made available by major smartphone platforms such as iPhone and Android. However most of the existing apps are dedicated to a given disease, population at risk or region.

WisePocket proposes an integrated mobile app development platform providing Health Care Ministries and Organizations a customizable framework to build and quickly deploy offline mHealth apps for (i) patient-care focused applications, such as health behavior change, (ii) health system-focused applications, such as reporting and data collection, and (iii) population health-focused applications, including awareness and testing campaigns. WisePocket features: Offline functionality which allows widespread use and continuous accessibility, with automatic refresh when connected to wireless. - Simplicity, Scalability and Sustainability for easy upgrade to accommodate new topics, uses and users. - High degree of Usability. - Interactive maps and Location based services. - Text messaging (SMS, email, etc...) – and text to speech to support information access to marginalized populations such as visually impaired and illiterate people.

WisePocket is currently under evaluation by the Cuban Ministry of Health in Santiago de Cuba for its usage to fight Dengue, Zika and Chingunguya.

**NOMINATED PROJECTS FOR THE PRIZE D4D
CATEGORY 'I CHOOSE'**

DEVELOPING IOT SENSORS FOR BENIN
to improve knowledge and safety of the marine and lacustrine waters in Benin

Zacharie Sohou, Institut de Recherches Halieutiques et Océanologiques du Bénin (IRHOB)
Katrijn Baetens, Royal Belgian Institute of Natural Sciences (RBINS)

Country involved

Benin

Target groups

Scientists, environmental managers

Theme D4D

Internet of Things (IoT), e-Science, Digital for environment awareness, Digital for inclusive scientific research

Objective

Develop and test a low-cost sensor system for marine applications, that measures, stores and broadcasts measurements to an IoT-account. We will start with a simple thermometer, and expand to other sensors (f.i. a conductivity meter) later on.

Summary of the project

This project supports the operation of IRHOB (Institut de Recherches Halieutiques et Océanologiques du Bénin) by developing a sensor system for oceanographic parameters. Unlike the commercial marine buoys, the system must be cheap, and keeps the option open to make different sensors operational. This allows to study the temporal and spatial distribution of multiple parameters. In contrast to satellites, the system should be able to realize measurements at multiple depths, and be sturdy and easy to handle. Waterproof thermometers can be obtained online for only € 1 each, and be controlled by Arduino nano clone microcontrollers (with SD card and WIFI access) that collect, store and broadcast the measurements, and also come at a low cost of € 5 each. Four rechargeable A4 batteries in serial are sufficient as a source of energy. Waterproof casings must be developed for the microcontrollers. During the project, we will also examine whether it is feasible to have microcontrollers and thermometers transported directly from the Chinese supplier to Benin, without the intervention of RBINS. The system will be optimized for environmental friendliness and efficient, accurate data collection, in the calm waters of Lac Nokoué (Benin). Immediately thereafter, the methodology will be applied in a study of the habitat of some commercial shrimp species, and in improving the marine prediction methodology of the IRHOB.

EIGHT
Unconditional cash transfers in Uganda

Maarten Goethals – secretary
Steven Janssens – chairman of the board
Edward Magezi – service point in Uganda

Country involved
Uganda

Target groups
Inhabitants of a rural village

Theme D4D
Mobile money

Objective
EIGHT uses unconditional cash transfers to trigger development in 4 ways. More children will go to school, there will be easier access to health services, more entrepreneurship will rise and there will be more collective action.

Summary of the project
EIGHT collects funds in Europe and sends them directly to recipients in Uganda via mobile money. Evidence shows over and over again that this is the most effective way of doing development cooperation. EIGHT empowers people to make their own decisions. People should be the actors of their own change. They don't need our analysis or advice. Poverty claims mental space of people and makes them focus on survival. By giving cash we temporarily give more mental space to people to make rational decisions and think further than mere survival.

THE GEO-OBSERVER NETWORK

Clovis Kabaseke (Mountains of the Moon University, Uganda)
Matthieu Kervyn (Vrije Universiteit Brussel, Belgium)
Liesbet Jacobs (KU Leuven, Belgium)

Country involved

Uganda

Target groups

Citizens of the Rwenzori Mountains, public authorities/NGOs in the Rwenzori region

Theme D4D

Better use of (Big) Data

Objective

The lack of accurate data on natural hazards is one of the major bottlenecks for disaster risk reduction in Central Africa. The objective is to collect first-hand information on recent disasters through a network of citizen reporters in the Rwenzori.

Summary of the project

Central Africa is a blind spot in terms of knowledge and understanding of disasters and their impacts. Yet, developing countries in particular are expected to be most severely affected by natural hazards in terms of mortality due to the effects of climate change and increasing population pressure. This is particularly true for the Rwenzori Mountains, a remote highland region located in the West of Uganda frequently affected by a series of environmental hazards for which very little data is currently available. By establishing a network of citizen scientists in the region, our aim is to set up a pioneering project focused on collecting reliable data on disasters in the region, serving as an example for other similar hazard-prone areas. A network of 21 geo-observers, local farmers inhabiting different areas of the mountain, was established. These geo-observers are on a day-to-day basis monitoring major and minor changes in their environment. Using existing freeware ('KOBO Open Data Kit tool'), data on eight different natural hazards is collected through the use of a basic smartphone, including pictures, structured questionnaires and GPS points. To do so, geo-observers were trained in the classroom and on the field. This data is managed and checked on its quality by researchers at Mountains of the Moon University. With future efforts and support, we hope to further broaden the capacities of the local partner to analyze the data, communicate on the results to local stakeholders and act as a true nucleus for scientific research and expertise with regard to natural hazards and risk reduction in the Rwenzori region.

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