

Annual Report 2019



ANNUAL REPORT 2019



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ANNUAL
REPORT
2019

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EXECUTIVE SUMMARY

Tanzania Data Lab (dLab) is registered in the United Republic of Tanzania as a Non-Governmental Organization under the NON-Governmental Organizations Act of 2002 with registration number OONGO/0009516.

dLab envisions Africa where data is frequently and effectively used to inform policy and decision making at all levels.

dLab mission is to strengthen data ecosystems and data usage in innovation, policy, and decision making on health, economic growth, and gender in Tanzania and Africa.

dLab implements a five year strategic plan (2019-2023) which focuses on five strategic pillars: Community Engagement - with the main objective of strengthening the data ecosystem to enable the community to generate and use data both at the national and sub-national level; Capacity Development - with the main objective of delivering tailored data related capacity building services to targeted individuals, groups and organizations; Data Science Services - with the main objective of promoting the use of data for evidence based solutions through data science products and services; Research and Innovation - with the main objective of promoting research and innovation that use data to address community pain points in collaboration with the respective sectors; and Institutional Strengthening

- with the main objective of enhancing the organizations capacity so as to effectively and efficiently undertake its mission.

In the year 2019, dLab implemented and achieved the following key milestones under each of the strategic pillars:

- **Community Engagement** - successfully rolled out Kyela sub-national data roadmap; contributed to the development of the action plan for the integration of non-traditional data sources in the production of statistics with NBS; conducted community mapping (shina mapping) covering the entire Kyela district; and hosted Data Tamasha 2019.
- **Capacity Development** - successfully conducted 14 capacity building sessions and trained 369 participants from public and private sector; placed and managed MSc in Data Science practicums for 10 students; reached 137 girls through CodeLikeAGirl program; launched Women in Data Science Dar es Salaam chapter; hosted two Machine Learning Bootcamps which trained 31 youths; and sponsored 4 students pursuing Msc in Data Science at University of Dar es Salaam.

- **Data Science Services** - supported public and private organizations such as NBS, BOT, CoICT, SUZA, JHPIEGO, MDH, BMAF and African Monitor with data science products and services; installed CSKAN to host dLab data portal; and joined Digital Earth Africa as the national partner and member of the Advisory Committee.
- **Research and Innovation** - a total of 16 innovators (9 from Window 4; and 7 from Window 5 which is a joint innovation challenge with WFP) were incubated and mentored in 2019. Three scale up innovation grants were awarded to three previous windows innovators.
- **Institutional Strengthening** - developed five-year strategic plan 2019-2023; established a board of directors; conducted 2018 external financial audit; and collected M&E data, validated the indicators, and tested the M&E tools.



Data partnerships

PANELISTS

DAVIS
ADIENO

Dr. HENRY
MWANYIKA

RUTH
INJA

RISHA
CHANDE

SOSTH
KEV

Y
EL





02.

CAPACITY DEVELOPMENT

Capacity Building is one of the core functions of dLab that is being driven by its mission "Delivering targeted capacity building through sector-focused partnership". For the year 2019, dLab through Capacity Development Pillar has trained 898 individuals in which 71% are female with 83% positive effect. In order to effectively and efficiently deliver its services, the capacity development pillar is divided into 4 strategic areas namely Public Training, Tailored Training, Women in Data and Youth Data Ambassadors. The following is the snapshot of 2019 activities per strategic areas under each of the outputs:

Output 1: Capacity of Individuals, groups, and organizations to manage and use data enhanced

- Public Training

In Order to continue supporting the wider data ecosystem in Tanzania, dLab conducted scheduled public training programs at fees ranging from \$100 - \$200 per individual. While the main objective is to support a wider ecosystem, the secondary and tertiary goals are to assess market needs and maintain public presence respectively. Hence, 4 workshops were conducted and 27 individuals trained.

- Tailored Training

In collaboration with local and international partners dLab delivered 8 tailored training workshops to 187 individuals mainly in the health and education sector. The workshops covered basic advanced skills in data management, analysis, visualization and storytelling. The capacity building services were delivered to PEPFAR implementing partners like JHPIEGO, JSI, ect, Ministry of Health, Nelson Mandela Institute Science and Technology, selected innovators and students from universities. All 8 workshops were fully funded by partners as detailed under the finance section. The ultimate outcome for this, is to create a pool of local experts within organisations who can support data driven decisions agenda.

Output 2: Improved participation of women in data related fields

- Women in Data

◇ Data4Her

Toward achieving a 50/50 participation by 2030 agenda, dLab has been engaging itself in different activities which promote female participation in data and technology. To achieve this dLab through capacity building pillar has partnered with Women in Data Science Conference (WiDS) under Stanford University, Institute for Computational



and Mathematical Engineering (ICME) to conduct WiDS Dar es Salaam in December 2019 which attracted over 200 participants. WiDS Dar es Salaam 2019 was conducted as part of Data Tamasha 2019. Data Tamasha is a dLab flagship event to celebrate the impact of data in the society.

◇ *Girls-Hack-Data*

In Commemoration of International Girls in ICT week, dLab conducts yearly a training workshop on data innovation skills. The goals are to enable young girls identify community challenge through data and turn them into innovative solutions. For year 2019 the program trained 42 girls.

42 **2019**
Trained Girls

◇ *Smart Girls*

Capacity building pillar have conducted a series of training sessions to girls in secondary schools. Six schools have been reached through smart girls' program. The smart girls program

involves three community schools which are Salma Kikwete, Kawe and Mikocheni. The other three schools are the privet schools which are Feza girls, Baobabs and Alpha. The goal of smart girls' program is not only to empower girls with computer skills but also to grow their network through growing their network by facilitating their participation in various learning events. The smart girls program trained 298 girls

298 **Smart Girls**
Program trained

◇ *Code Like a Girl*

In partnership with Vodacom Tanzania, capacity building pillar has conducted a series of coding training workshop to girls between 14 – 18 years of age. The program trained 267 girls. The goal of the program is to inspire young girls to pursue STEM subjects. The program teaches website development in four days. In the fourth day each girl is able to develop a web page. Furthermore the program equipped girls with pitching skills to enable them to communicate their products to wider audience.

267

CodelikeaGirl
Program trained

Output 4: Data science skills enhanced

- MSc Data Science Program

Capacity Development Pillar is providing ongoing support to University of Dar es Salaam - MSc Data Science students in coordinating and conducting practicum and capstone projects. A total of 10 students have benefited from the program. The program involved attaching students to organizations to get industrial experience. Students were distributed in four organizations

which are Benjamin Mkapa Foundation (BMAF), JHPIEGO, MDH and Bank of Tanzania (BoT). Ten prototypes have been developed under the data science program. The following is the Data curation tool developed by students for one of the PEPFAR implementing partner known as JHPIEGO. The tool compares two dataset and return data mismatch.

Data Accuracy Check Tool for JHPIEGO Tanzania

jhpiego Data Accuracy Check Tool Hi, Vindi Sign Out

Wizard For Comparing two CSV datasets

Dataset Accuracy Check Tool

Please follow the steps below to upload, set ID columns, compare and download the results.

1. Upload Datasets 2. Choose column IDs 3. Choose columns to compare 4. View Summary and Compare

Datasets Upload forms

Dataset 1

Select file

Upload the first dataset in csv format (.csv)

Dataset 2

Select file

Upload the second dataset in csv format (.csv)

Previous Next

In order to assess skills beyond classroom, capacity building pillar partnered with Zindi. Zindi is a South African based organization that runs machine learning challenges across Africa. Data science students participated in two innovation challenges. A total of 31 students participated from University of Dar es salaam and other colleges in Tanzania. In addition, capacity building pillar in partnership with other development partners facilitated the AI debate for university students. The main discussion was the role of AI in the economic growth of developing countries. The AI debated attracted 170 participation among individuals in the universities and innovation hubs.

- **Youth Data Ambassadors**

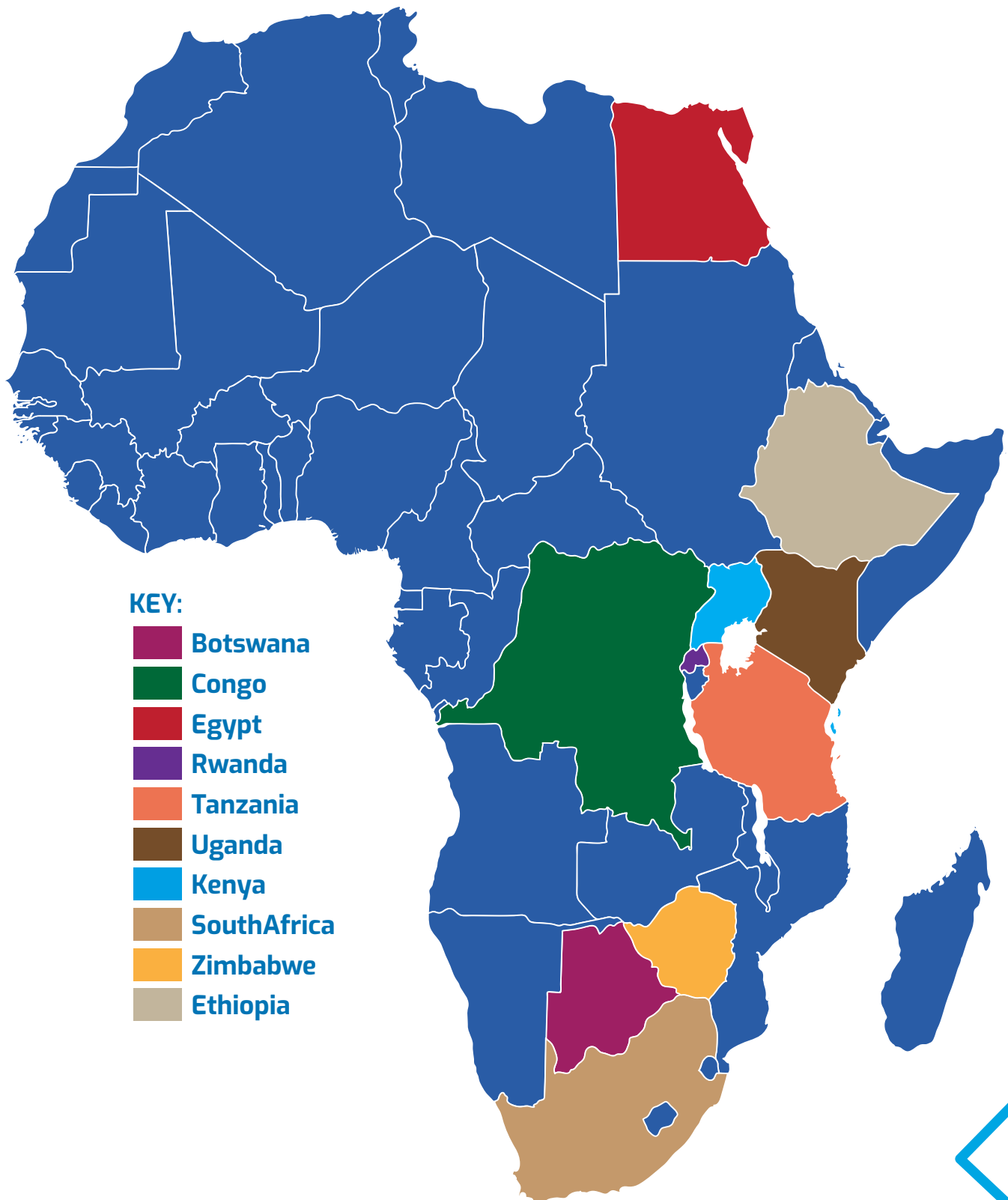
In order to foster data driven innovations and amplify youth voice in matters pertaining to their community

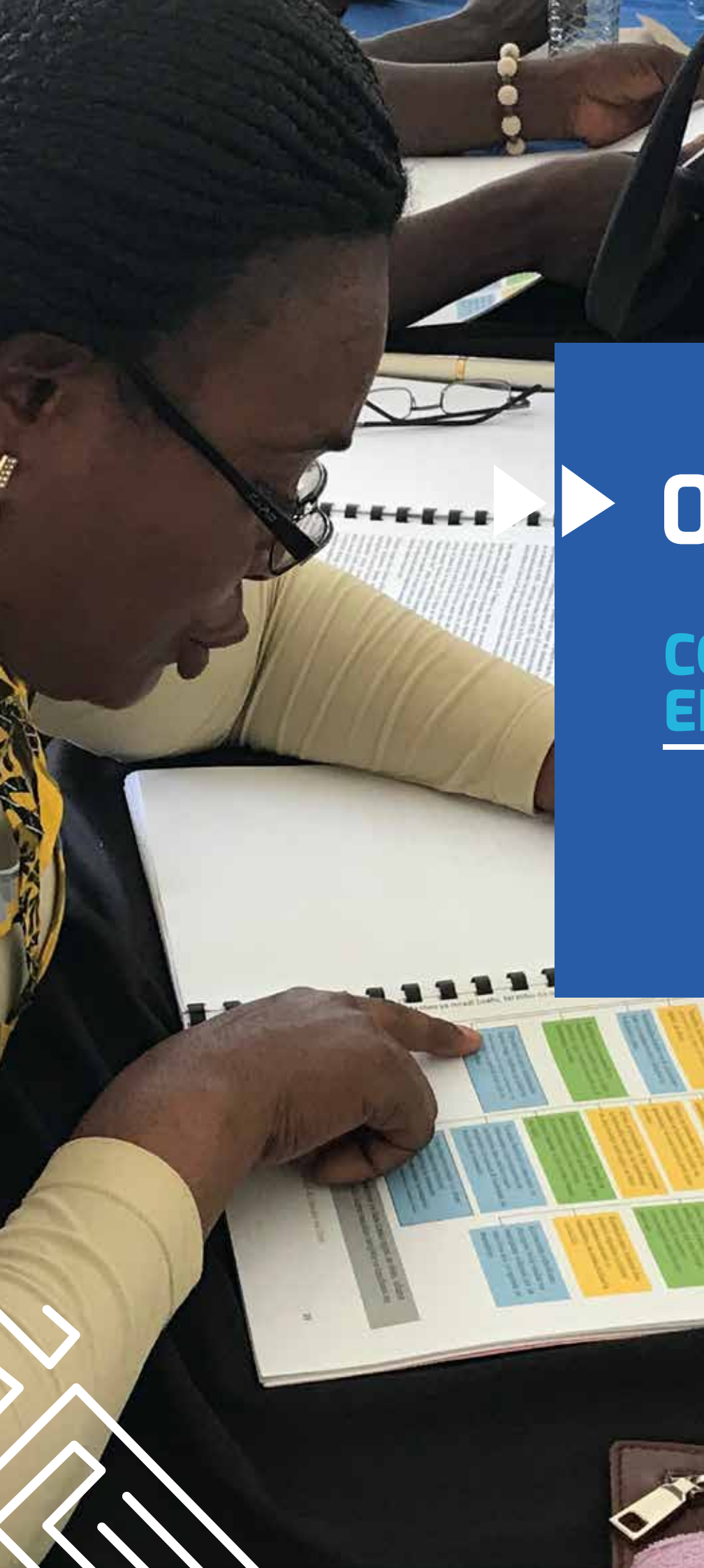
challenges. dLab conducted two Machine Learning bootcamps to equip youth with competitive skills to be able to develop data driven solutions using Artificial Intelligence. The bootcamps lasted between 2 - 8 weeks and 31 participants attended. The youth ambassador program was fully funded under the APS program implemented by dLab.

In 2019 dLab was awarded \$25,000 by US Ambassadors Fund for HIV/AIDS (AFHR) to conduct a campaign using male social media influencers. The campaign will be implemented in Jan – September 2020. Preceding the campaign, the male social media influencers will be trained on data visualization and storytelling to enable them to conduct a data driven campaign with compelling visuals to attract targeted audience. The influencers will also be attached to mentors



Capacity Development Reach





03.

COMMUNITY ENGAGEMENT

This pillar is making sure the community members i.e. citizens, private sector, NGOs and CSOs are engaged and involved in generation of and realization of ideas that promote data collection, manage, share and use. It provides an opportunity and empowers the citizens to raise their voice based on the evidence they have generated themselves and take action.

This pillar is also responsible to support other pillars by making sure the needs of the community are collected and communicated for the proper and relevant design of the programs and its respective activities.

As per our strategic plan, "the overall goal of community engagement is to promote frequent and effective use of data at all levels by making sure both supply and demand sides of data are met by empowering different members of the ecosystem to play their roles as data producers and users".

The main strategic objective of the Community Engagement pillar is to contribute in strengthening the data ecosystem that empowers the community to own, generate and use data. The expected strategic objectives will only be achieved when both national and sub-national data ecosystems are enhanced.

In order to achieve the above strategic objective, for 2019, the pillar did focus on two outputs i.e disseminating the

National and Sub-national data road map, engagement of citizen-generated data and promoting its use.

Output 1: National & Subnational data road map disseminated to stakeholders:

Based on the experience and learning's gathered from Data Zetu, project, it was noted that most of the sub-national data ecosystems are weak and need a clear guideline to support strengthening them. While the pillars' ambition is to make sure each district in Tanzania has its own data road map, more efforts are needed to find the resources from different sources to implement, this includes meeting face to face with developing partners and presenting in different forums and workshops.

For 2019, all the activities planned to support roll- out of the Kyela Data road map and create more awareness to the key stakeholders were done. Some of the conferences where the roadmap was presented includes Data Rev conference held in Washington and Data Tamasha 2019 held at Tanzania Datalab. Some of the donor community engaged face to face includes DFID, SWISS, SIDA and Botnar Foundation. Apart from the physical participation, the document was shared online through different links, website and



social media. This has brought some positive results in terms of Kyela road map support. and also one district will do the road map in this year i.e 2020.

Output 2: Citizen Generated Data promoted and used:

As we all know, the capability of the government to collect all relevant data for informed decisions is low based on the data gap assessment conducted. It is obvious there is a need to support generation and use of citizen generated data. As part of engaging citizens and enhance data generation based on the community problems in Kyela, Community mapping exercise was conducted. The data collection was aimed to inform the decision makers to address problem of Health service quality, HIV testing,

For 2019, a total of 7701 data points was collected, and some of them have been shared in the Open Street Map platform. Several visualizations

were developed including HIV Hotspot areas, Health facility locations and Communal water points.

Social media. This has brought some positive results in terms of Kyela road map support. and also one district will do the road map in this year i.e 2020.

Data Points

1700	Hyperlocal Boundaries
3900	Hepatitis B and HIV Household Survey
1213	Communal Waterpoints
23	Farming Cooperatives Offices

360

HIV Hotspots

530

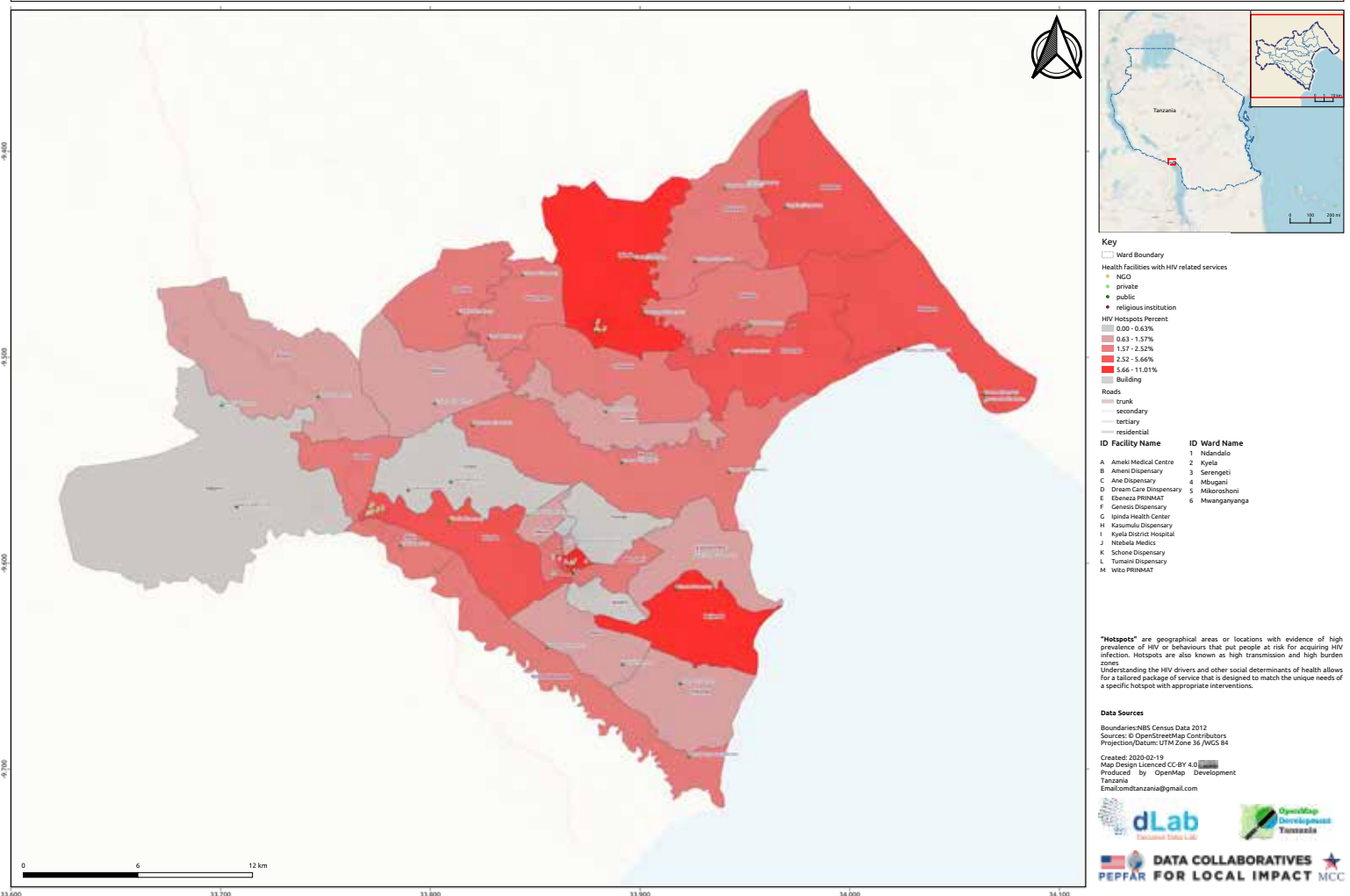
Other Important
Facilities ie. Schools,
Banks

55

Health Facilities with
related HIV/AIDS
services provided

Kyela District Council HIV Hotspots Map

HIV Hotspots Map in Kyela District: an evidence-informed HIV response



Tanzania Data Lab in collaboration with Southampton University conducted capacity building sessions both in Dodoma and Dar es Salaam to enhance both public and private sector researchers, data science and policy makers to use geospatial data to inform decision in the Education sector specifically in the primary and secondary school. A total of 25 local experts benefited from the phase one of the program and it includes people

from Ministry of finance, President Office, Regional Administrative and Local Government Ministry, Ministry of Finance, National Bureau of Statistics and Researchers from UDSM, Dodoma University REPOA and ESRF.

The second phase of the program will be done in 2020 and it will focus more on the practical part of the evidence development using satellite data and other data collected from the government and other accredited organizations.

UNIVERSITY OF
Southampton



The screenshot for Tanzania contains availability data and trends for individual indicators categorized by goal.

GOAL: POVERTY

- ☐ No data available
- ☒ Data available

- ☒ Additional indicator
- ☒ Trend/forecast indicator
- ☒ Global indicator

TARGET 1.1

1.1.1 Proportion of population below basic needs poverty line



TARGET 1.2

1.2.1 Number of people living in poverty

1.2.2 Number of people living in poverty

1.2.3 Share of population living in poverty

TARGET 1.4

TARGET 1.2

1.2.1 Proportion of population living below the national poverty line, by sex and age



1.2.2 Proportion of men, women and children of all ages living in poverty in all its dimensions according to national





04.

**RESEARCH &
INNOVATION**

dLab approach to research and innovation seeks to promote research and innovation that use data to address community pain points in collaboration with respective sectors. dLab works with other stakeholders to promote Research and Development activity to catalyze innovation process, which allows investment in technology and future capabilities, which are likely to avail useful knowledge and data that can be used to develop new innovative products, processes and services that address community pain points. Research and innovation have been a significant growth driver in the data age and essential in solving most of the challenges of our time. dLab believe a Tanzania where innovators, entrepreneurs and youth are empowered to use data and technology to address pertinent problems affecting our countries and communities

dLab is currently engaging, supporting and connecting innovators, developers, and solution providers to each other and to opportunities. By doing so, dLab is making a difference in people's lives by increasing the use of and/or access to research data and its application in innovation. Also the dlab currently works with other stakeholders like World Food Programme (WFP) to manage innovation and research funds as a fund manager, and to facilitate transfer of knowledge from publicly funded

research to enterprises, thereby reinforcing the impact of research on innovation capacity.

OBJECTIVES

Promoting linkages between research works and innovations that use data to address community pain points and manage innovation funds

OUTPUT

- Increased awareness and support to innovators
- Data-driven innovation community of practice
- Innovations nurtured and/or scaled up by providing an array of business development services preferably by incubation program
- Research data used and shared with relevant stakeholders to spur data driven innovations

Output 1: Increased awareness and support to innovators

dLab inherited thematic areas created by the Data for local impact innovation challenge (DLIIC) based on pertinent community problems based on which, it inherited innovation challenges innovators and continued providing

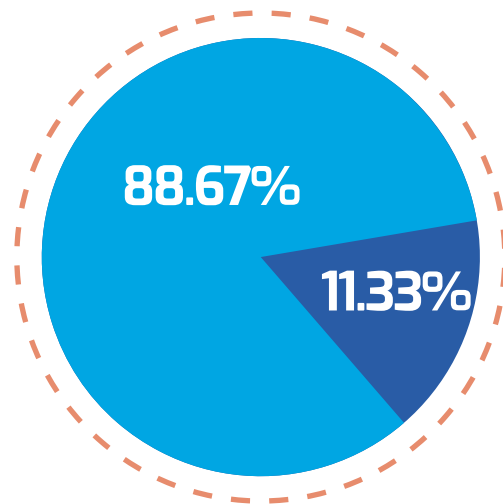
grant funding and technical support to progress innovative ideas and projects (i.e. sub-grantees) For 2019 the directorate was able to successfully coach and mentor W#3, W#4 and W#5 grantees, the directorate Facilitate B2B and B2C linkages, conducted joint boot-camp with WFP, captured, generate and share use stories, negotiated new partnerships with selected promising sub-grantees and worked with WFP to identify innovators for additional funding, all this in the span of 12 month.

SUCCESSSES

- Attracted development partners and government agencies:
- World Food Program (WFP) - Window 5 #ZeroHungerZeroAids
- HDIF & COSTECH - Grassroot Innovation Challenge
- TACAIDS - Triple 90 Aids Challenge

In order to continue the legacy of DLIC mentorship and business development support to sub-grantees have continued to be a successful activity which in 2019 translated ideas into solutions that have high potential to address pertinent community challenges in Tanzania. The solutions are poised to address issues in sectors of health, economic growth, education to name just a few. We have been able to support 53 innovators through

Window 1 to Window 5 and a good number of other innovators.



Completed

47

Not Completed

6

Innovators **56**

12

Window 1

10

Window 2

15

Window 3

9

Window 4

7

Window 5

Output 2: Data driven innovation community of practice formalized

Currently we are working with various innovators, hubs/labs and institutions in various areas of the country and in the year 2019 research and innovation interventions have attracted interest of a section of development partners and government agencies in the country. For example, WFP joined up with dLab to run the "Zero Hunger Zero AIDS" innovation challenge. Ongoing consultations for collaboration with FSDT, KiliHub and Vodacom Foundation. The directorate has also had cordial relationships with COSTECH, HDIF and TACAIDS.

Output 3: Innovations incubated and/or scaled up through dLab

For the year 2019, dLab has incubated 9 innovations of Window# 4 and 7 innovators of window# 5. Also 3 projects have received scale-up awards out of the pool of already existing innovators. Even with limited visibility, dLab through the research and innovation directorate has attracted other several individual innovators and SMEs for business development support. Going forward this is setting a steppingstone for transitioning from innovation fund management to a full-fledged business development support entity.

WINDOW 4 INNOVATION - UPDATES

Innovative solutions have been created to solve problems such as :

- Substance abuse,
- Physical/Sexual abuse
- Teenage pregnancy
- Early childhood development.

\$351,150

Grants was Awarded

5 4

Females Males

WINDOW 5 INNOVATION - UPDATES

\$90,000

Grants was Awarded
by MCC - PEPFAR

5 4 1 1

Females Males Individual Organization

\$35,000

Grants was Awarded
by WFP

2 1

Females Males

Also, the directorate has documented use cases of successful data driven innovations as knowledge management products that can be shared with multi-sectoral stakeholders in the country to drive innovation agenda.

Leveraging on DLI project goodwill, forge business partnerships with selected sub-grantees to improve dLab financial stability. Subsequently the target will go beyond DLI project sub-grantees to include other promising start-ups and medium enterprises in the country. dLab is set to provide enterprises a much-needed array of business development support services.

However, to be able to attract medium enterprises, dLab will have to map and identify target entities and design attractive value propositions to cater for their tailored needs. To maximize return of any investment to dLab will be on a case to case basis (each

model befits different arrangements) ranging from equity shareholding <https://income-outcome.com/what-is-shareholder-equity/>, revenue share <https://theecommerceprofits.com/revenue-share-model/>, and royalty payments <https://www.thebalancesmb.com/what-are-royalties-how-they-work-4142673>.

Output 4: Research data used and shared to spur data driven innovation

dLab worked collaboratively with other institutions such as COSTECH to leverage on their already existing database of MAKISATU to develop grassroots innovation challenges. It took many turns and finally ended up in a formation of a Scale Up Challenge Window which comprised all former and current innovators to compete for more funding to scale up their prototypes and realize their dreams of adding more functionalities, moving to new testbeds and geographic areas or reaching out to customers/clients which could not be reached with only a prototype.

Much of research works in Tanzania are academic hence of little value for technology transfer or utilization for commercial sense in terms of innovation works. dLab is still working with other players in the innovation

ecosystem to develop a pipeline of research works that can be useful to steer up innovation.

There is an opportunity for dLab to package and provide market intelligence data to drive both innovations works and business enterprising industry in Tanzania. To progress this dLab will have built more capacity of the Data Science unit and to consult with R&I institutions and conduct needs

assessment for the industry, including figuring out adequate business models with beneficiaries.

Innovation clinic concepts was a significant milestone in 2019 to bring about impact in the innovation ecosystem in Tanzania. From a sustainability standpoint, their implementation requires collaboration of other players in the innovation ecosystem. Underway are consultations with selected potential partners – for support to progress with implementation.





05.

DATA SCIENCE SERVICES

Data Science pillar objective is to develop strategic data systems and solutions to inform policy and decision-making at different levels in public, private and Civil Society Organizations. This involves data processing technologies and advanced data analytics in harnessing data and offer data driven solutions to national and subnational problems.

For the year 2019, dLab through Data Science Pillar has offered data science services to government and non-government institutions including international organizations such as NBS, BOT, CoICT, SUZA, JHPIEGO, MDH and African Monitor. These services range from supporting NBS to conduct National SDG Data Readiness assessment through the use of ADAPT tool, developing a community health worker data collection and decision making tool for Benjamin Mkapa Foundation, supporting development of Data Discrepancy tool for JHPIEGO verification data for HIV/TB programs to data analysis and visualization for African Monitor SDG Citizen Generated data. The following is the short walkthrough of 2019 activities per strategic areas:

Output 1: Data From Different Producers are Stored and Shared Through a dLab Data Portal

For dLab to strengthen and support data from different stakeholders to be easily available and accessed, from

both official government sources and non-official sources, data portal is the platform to join all players in the data revolution to share, use and reuse data.

For the year 2019, dLab has installed CKAN framework as a platform to be customized for the data portal and now the data portal is still being customized to incorporate other services required for a fully functional data portal so stakeholders can share their data and rich wider audience of users and other stakeholders.

Output 2: Use of Data Science Products and Services is Enhanced

In 2019 dLab collaborated and supported other organizations in enhancing the use of data science services and products. Three products and several data science services were developed as a result of these engagements as outlined below.

- National SDG Data Readiness Assessment

The Data Science pillar offered technical support to the National Bureau of Statistics and line ministries by leading workshops on the use of ADAPT Tool version 1.1 to assess national data supplies to meet SDG data demands including financial analysis in implementing national statistical master plan (TSMP).

This activity helps in the baseline report in coming up with specific indicator values to later report on the national dashboard for SDG indicators. **(fig2)**

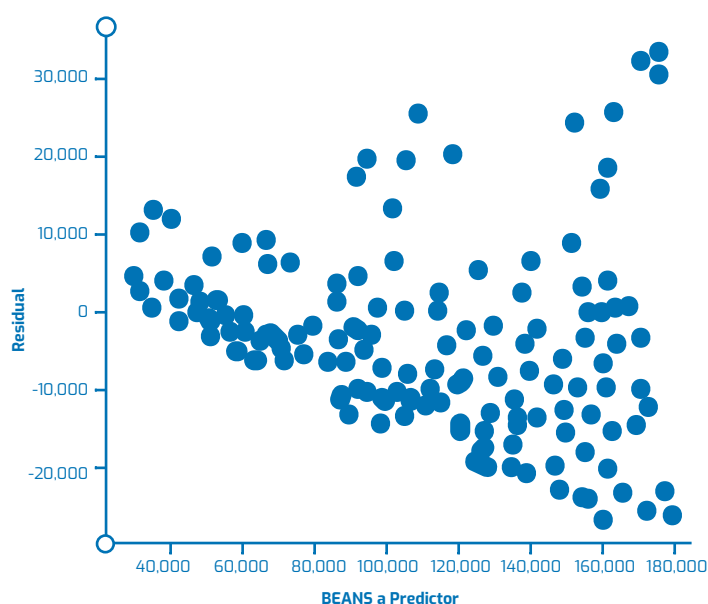
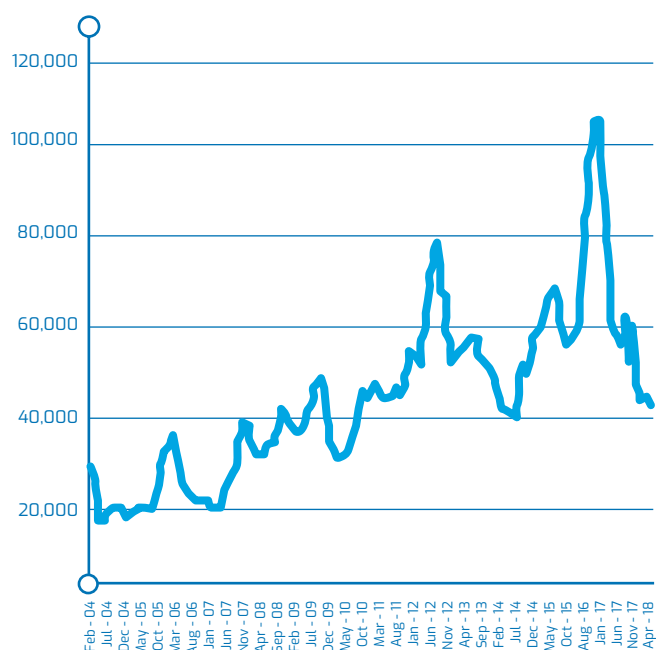
- Support ColCT Capstone and Practicum Programs

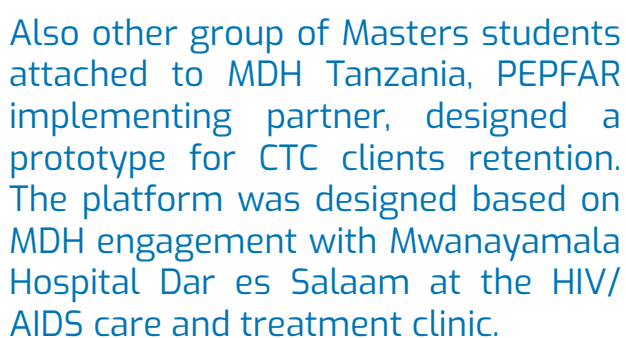
dLab Data Science pillar in collaboration with capacity development, supported the College of ICT (ColCT), UDSM to both design, deliver, supervise and advise on the two industrial related Masters of Science in Data Science modules, Practicum and Capstone.

These modules resulted in enhancement of students industrial data science skills and several dLab supported data science solutions.

In the Capstone students attached to JHPIEGO developed a data discrepancy tool to compare and analyze datasets from JHPIEGO TB/HIV programs and the ones available in the national HMIS. Apart from the JHPIEGO product also, there was a cash crops price prediction Machine Learning algorithm developed for Bank of Tanzania (BOT) by Masters students out of the Capstone project.**(fig3)**

Fig2





- In data science skills enhancement and practicing, dLab in collaboration with Inspire Ideas organized, supervised

and conducted a machine learning bootcamp to seventeen (17) bachelor degree students from University of Dar es Salaam (UDSM) and Institute of Finance Management (IFM) as part of their practical training program.

In collaboration with Zindi Africa, the Data Science pillar designed and conducted a machine learning hackathon on financial inclusion during 2019 innovation week. The



hackathon aimed at analyzing the use of financial services in Tanzania using Finscope data and also searching for young and upcoming data scientists including exposing them to real world challenges and help them apply their knowledge to solve challenges.

With the same collaboration, dLab organized another two hackathons, one was during 2019 Data Tamasha and one was inter-college challenge March 2020. As some of undergraduate students from College of ICT participated also in these hackathons, they further explored machine learning challenges and now have developed prototypes in the areas of cervical cancer and TB prediction, e-Learning dropout, stock price prediction, agriculture chatbot and mental health e-therapy.

- Data Analysis & Visualization and Machine Learning

In collaboration with Capacity Development pillar and GeoInformatics Lab, Data Science pillar designed and conducted paid and programmatic training on areas of Data Analysis, Visualization and Machine Learning.

Under AFHR funding, Data Science pillar in collaboration with Capacity Development pillar conducted four training on Data Analysis and Visualization to ICAP, JSI and DELOITTE, which are PEPFAR implementing partner organizations in Tanzania. Also in collaboration with Capacity Development pillar, Data Science pillar conducted a paid training on data analysis and visualization for policy making to forty (40) PO-RALG staff from various regions under SHOPSPLUS funding, more details on this will be available in the Capacity Development section.

dLab Data Science pillar in collaboration with GeoInformatics Lab of TURKU university conducted a data visualization and machine learning training to twenty (20) staff and students from University of Dar es Salaam (UDSM), ARDHI University, Sokoine University of Agriculture (SUA) and State University of Zanzibar (SUZA).

Apart from training, the Data Science pillar also was engaged with African Monitor, African Organization based in South Africa, to conduct data analysis and visualization of citizen generated data on several SDGs to get citizen reflection on the progress of SDGs progress.

The data was from a few districts of Kenya, Tanzania and Uganda, and the analysis mostly focused on Health, Education, Gender, Economic Growth, Governance and Peace & Security.

- CHAID Tool for Benjamin Mkapa Foundation

dLab Data Science pillar was consulted by Benjamin Mkapa Foundation (BMF) to help them with developing a Community Health Assistant Information and Decision-making (CHAID) Tool, that can help Health Community Workers (CHWs) in Chemba district, Dodoma region under Mkapa Fellow program timely report on Mother and Child health data, generate referrals for community health emergency cases and help BMF closely monitor reporting behavior/ routine of these CHWs so to enhance quality of the data reported and at the same time help facility supervisors and district health officers get timely report on the CHWs engagements in the community.

dLab Data Science is consulted as technical experts and in the year 2020 there will be enhancement of the tool to capture more services and capture more reports and/ or programs. Financial details as a result of the engagement will be in the financial section of the report but the tool is to serve more than 110,000 population from 35 villages of Chemba district served by 18 health facilities.

Output 3: Use of Geospatial Data Enhanced

As the data revolution demands the use of traditional and non-traditional data to attain sustainable development, dLab has positioned itself to spearhead the development and deployment of a platform to host geospatial data.

For the year 2019, dLab has installed GeoNode framework, PostgreSQL database and a Geoserver that need to be configured to support each other to host geospatial data. In 2020 further configurations and customization of the platforms including documentations and guidelines on the use of the platform will be developed to ensure launching and smooth running of the platform.



06.

INSTITUTIONAL STRENGTHENING

Output 1: Improved resource mobilization from diverse sources to support operations and sustain the organization

In 2019 Tanzania Data Lab raised TZS 2,464,169,396 from grants, donations, and program income. (fig.4)

TZS 2,464,169,396
Achieved Income



Overall in 2019, Tanzania Data Lab wrote and submitted 8 funding proposals and organized Data Tamasha 2019 that contributed to the resource mobilization efforts.

Output 2: Improved Working Conditions

In 2019 Tanzania Data Lab sustained a conducive working environment to staff and partners and upheld high staff welfare standards.

Regular maintenance of dLab office, furniture, fittings and equipment were made to ensure smooth business operations throughout the year.

Staff and partners payments were made within the agreed timeframe and inline with the respective contracts.

Output 3: Improved Talents and Skills

In 2019 Tanzania Data Lab staff and partners were facilitated and supported to attend different training, workshops and conferences both local and international.

A second cohort of four (4) PEPFAR scholars was also recruited in 2019 and sponsored to join the Master of Science in Data Science program at University of Dar es Salaam and work with Tanzania Data Lab for the duration of their studies at the University of Dar es Salaam.

Output 4: dLab visibility enhanced

In 2019 Tanzania Data Lab co-organized and co-hosted the Innovation Week 2019, and joint workshops with the National Bureau of Statistics on integration of non-traditional data into official statistics. dLab also organized and hosted #CodeLikeAGirl program in collaboration with Vodacom Tanzania, #Data4Her, Women in Data Science #WiDS Dar es Salaam, and #DataTamasha2019 that contributed

in enhancing dLabs visibility and image.

dLab engaged expertise to review and advise on dLab communication assets. One of the experts was later engaged to support the revamping of the Tanzania Data Lab website and other communication assets that is still ongoing.

Social media influencers were engaged during Data Tamasha 2019 which led to #DataTamasha2019 and dLab to trend on social media channels throughout the days of Data Tamasha 2019.

Press briefings were also organized as part of different activities hosted by Tanzania Data Lab which led to media coverage in different media channels.

Moreover, documentation of dLab supported innovators, MSc in Data Science Students 1st and 2nd Cohorts, and Data Tamasha sessions was done in 2019 as part of efforts to create communication content for use in promoting Tanzania Data Lab.

Output 5: Partnership with strategic organizations increased

In 2019 dLab focused more on servicing the existing partnerships and capitalizing on the existing strategic partnerships.

However, dLab visited George Mason University and its Data Lab and initiated a process for a strategic partnership with George Mason University on Data Science, Research and Innovation which is scheduled to be concluded in 2020.

Output 6: dLabs governance and administration is improved

In 2019 Tanzania Data Lab conducted an external financial audit for the financial year ending on 31st December 2018, constituted a Board of Directors to enhance its governance structures, validate the indicators and tested the monitoring tool which led to the development of 2019 annual consolidated ITT report for Tanzania Data Lab. This also involved testing of assumptions made by the organization as outlined in its monitoring, evaluation, and learning framework.

OUR SPONSORS



DATA COLLABORATIVES
PEPFAR FOR LOCAL IMPACT MCC

PATH
PILLAGED
TANZANIA

unicef

FSDT



Twaweza

HDF





07.

DATA TAMASHA



DATA TAMASHA:

From 4th to 6th December 2019, Tanzania Data Lab (dLab) held the DATA TAMASHA event, which had been organized in collaboration with various partners including the university of Dar es Salaam – College of ICT, UNICEF, Path Tanzania, UN Women and many more. Data Tamasha (Swahili for Data Festival) is a biennial flagship event of Tanzania Data Lab that brings together data and innovation ecosystem stakeholders from Tanzania, all over Africa and across the globe to showcase best practices and share experiences on how data and data driven innovations can contribute towards inclusive sustainable development.

The 2019 DATA TAMASHA was another success of the dLab event due to its liveliness generated from the dialogues, panel discussions, presentations, interactive sessions, exhibitions and public outreach activities involved diverse profile of participants. The event was held at Tanzania Data Lab premises located at College of Information, Communication and Technology, University of Dar es Salaam.

OBJECTIVES

The main objective of the DATA TAMASHA 2019 was to bring together diverse groups and profile of people from all over the world with different interest, expertise, use cases on data

and innovation to raise, discuss and provide recommendations on data-related issues for future action.

THEMES

The main theme for the year 2019 was *'The Power of Data for Inclusive Sustainable Development'* with sub-themes of the event as follows;

1. Women in Data Science
2. Emerging technology and Data
3. Optimizing the use of Citizen Generated Data
4. Data Literacy

Day one of the event was exclusively focused on the Women in Data Science Sub-theme where dLab launched the Dar es Salaam Chapter on Women in Data Science Network (WiDS) as part of the global network which was established by Stanford University with the sole purpose to promote women to engage in Data Science. All presenters, speakers, exhibitors and panelists for Day one were female experts who work with data.

Day two and three were all filled with discussions from the remaining sub themes: Emerging technology and Data, Optimizing the use of Citizen Generated Data and Data Literacy. Talks looked into different areas

within the data ecosystem from data driven innovations. The sessions were on: adaptation of AI in Tanzania on the Applications, Challenges and Opportunities; the legal and regulatory environment in Tanzania; Tanzania's Data roadmap; Data privacy and security; Citizen Generated Data; Mobile Data for social good; Data Storytelling and journalism; & Geospatial data applications in Tanzania.

PARTICIPATION

More than 700 people registered for Data Tamasha 2019 with participation from different countries including

Tanzania, Kenya, U.S.A, Finland and Uganda. The event brought together stakeholders of different expertise and industries; these included data experts, technologists, representatives from CSOs; representatives from international organization, media experts, university students and government representatives. For those who did not manage to participate physically, they were engaged through dLab social media channels under the hashtag #DataTamasha2019 and #ThePowerOfData.



DATA TAMASHA 2019





08.

**LESSON
LEARNT**

- Documenting use stories is not enough, we need to make an extra effort to share them with the public so they can tell a story about the good work that we are doing at dLab
- Creating structured information (metadata standard) that describes how to retrieve, use and manage the current information resources within the 3 DCLI Projects was challenging.
- There is need for real-time data from the point of collection such as gps coordinates, pictures, video and audio in efforts to improve data quality
- Data infrastructure is an issue at the local government and need to be addressed especially now where application of Information, Communication Technology is critical
- Data skills, for the local government employees is low and need proper training program
- Staff movement at the local government is a big challenge. For example in Kyela, three directors were changed in almost one year.
- Government plans still does not show data as a priority at the local government level like what is happening with HIV
- Weak planning units and wrong perception of their responsibility seems to be a huge challenge. When a planning unit is strong, data flow from all sectors tends to be available.
- It is very critical to understand how the government both central and local government work in order to create sustainable partnership
- It is very easy to blame the local government partners, however due to the way they work and operate sometimes it is not the focal person's fault. However, it needs a lot of pushing and make sure the program is known to everyone from the top to the bottom to make it happen
- Community knowledge about data is new, it will take time and resources to make sure there is a change. Documentation of the key success is critical to stimulate other donor and partners to come in
- Local government is weak in coordinating different implementation partners at

the district level. Data road map is the solution to address the problem, it empowers the district statistical officer to have all relevant data and advise the district. Municipal director accordingly.

- Existence of the political dynamics in decision making processes
- Data road map is a wake-up call to different stakeholders and still needed by all districts. Botnar foundation is supporting one for Tanga
- Like other players in the innovation ecosystem, dLab is embroiled in unfavorable policy and regulatory environments. Tanzania still lacks an innovation policy and a roadmap to

grow innovation works while procurement laws have proved to be bottlenecks for emerging companies (startups) to commercialize their innovations.

- dLab has only managed to attract a handful of medium enterprises for business development support that would have improved cash flow. In progress is development of an adequate business model and tailored value proposition for medium enterprises.
- dLab is the only organisation developed sub-national data road map in Africa, promoting it to other countries is critical
- Recognition of the value of citizen generated data create more opportunity to dLab to be engaged and show more use







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