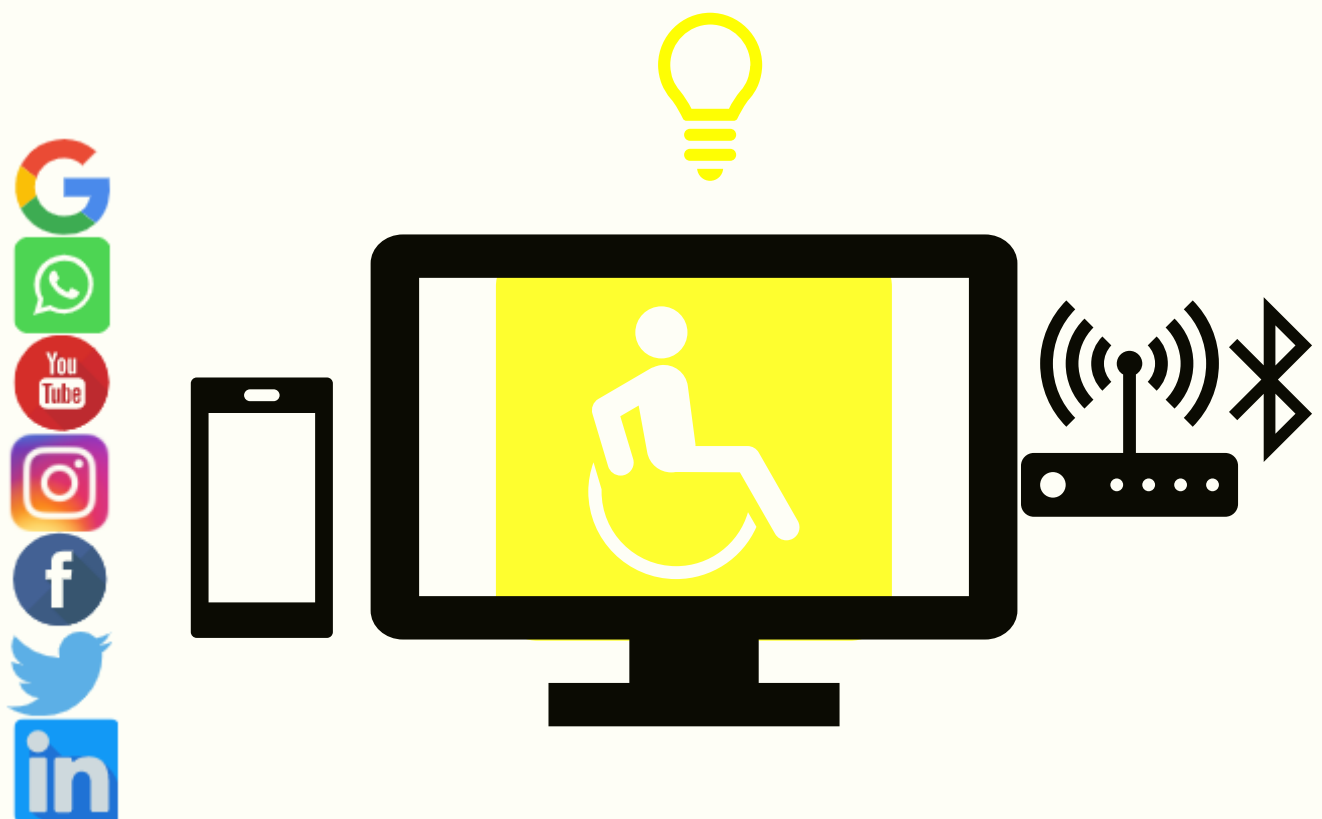




Digital Readiness Among Tanzanian NGOs Working with People Living with Disabilities



December 2020

Acknowledgement

The production of the Digital Readiness Among Local NGOs Working with People with Disabilities report is a joint effort from a dedicated team of staff from the Finnish Development NGOs (Fingo) led by Emma Nkonoki, an Expert in Innovation and Development at Fingo and Meltores Professional Staff – a research firm based in Tanzania. We are grateful for Fingo’s investment in assessing the digital readiness of Tanzanian Local NGOs working with People Living with Disabilities (PLWDs). The team would like to pass sincere gratitude to the NGOs, startup and innovation ecosystem players in Dar es Salaam and Iringa that participated in Key Informants for their insights and time.

@2020 Fingo

Report written and designed by

Meltres Professional Company Limited

7th Floor Tanzanite Park, Ursino Street

Bagamoyo Road, Kinondoni,

Dar Es Salaam, Tanzania.

Phone #: +255 715 225 551, +255 755 624 900

Email: services@meltresprofessional.com

www.meltresprofessional.com

Twitter: <https://twitter.com/Meltrescompany>

Table of Contents

Acknowledgement	2
Glossary	5
Executive summary.....	6
1. Background.....	7
2. Overview of Tanzania Digital Space.	8
2.1 Tanzania Digital Innovation Ecosystem.....	8
2.2 Tanzanian NGOs In The Digital Innovation Ecosystem.....	8
3. About Local NGOs Working with People Living With Disabilities	11
4. How Local NGOs Working with PLWD Use Digital Technology?.....	12
4.1 Access to Working Space	12
4.2 Access to Electricity	12
4.3 Access to Internet	12
4.4 Access to Digital Tools and Technologies	13
4.5 Use Of Digital Technologies	13
4.6 Conclusion on NGOs Use of Digital Technology	14
4.4 Recommendation on NGO’s Use of Digital Technology.....	14
5. How Ready is Local NGOs’ Workforce for Digital Transformation?.....	16
5.1 Education Level.....	16
5.2 Digital Skills	17
5.3 On-Job Training.....	18
5.4 Conclusion on the Workforce Digital Readiness.....	18
5.5 Recommendation on the Workforce Digital Readiness.....	18
6. How do Local NGOs Finance and Regulate Digital Technology.....	19
6.1 Financing Digital Technology	19
6.2 Policy And Regulations Around Digital Communication.....	20
6.3 Recommendation on improving the NGOs Digital Finance and Policies.	20
7. Level of Collaboration Between Local NGOs and Digital Innovation Stakeholders in Digital Inclusion of People With Disabilities.	21
7.1 Opportunity.....	21
7.2 Reality.....	21
8. Digital Inclusion of Local NGOs Working with People Living With Disabilities.....	23
References.....	25

List of Figures

Figure 1: The Snapshot of the Report	10
Figure 2: Profile of Local NGOs working with People Living with Disabilities in Iringa and Dar es	

Salaam..... 11

List of Tables

Table 1: Highest Education Level of Staff working with PLWD..... 16

Glossary

ADDS – Afri Disability development and solutions

AFRIC – Africa Foundation for Inclusive Communities

BKF – Le Baos Kids Foundation

CA – Call Africa

CCMBWU – Chama Cha Madereva wa Bajaji Wenye Ulemavu

CWVT – Chama cha Walimu Viziwi Tanzania

DYDC – Iringa Development of Youth Disabled and Children Care

FDH – Foundation for Disability Hope

ICT – Information Communication Technology

KISUVITA – Kituo cha Sanaa na Utamaduni kwa Viziwi Tanzania

LAF – Lukiza Autism Foundation

Neema Craft

Neema Rehabilitation

NELDETA – New Life for the Deaf in Tanzania

NGO – Non-Governmental Organisation

NYUMBA ALI – Nyumba Azimio Lenye Imani

PLWD – People Living With Disabilities

POS – Point Of Sales

TANESCO – Tanzania Electric Supply Company Limited

TUSPO – Tanzania Users and Survivors of Psychiatric Organisation

VODIWOTA - The Voice of Disabled Women in Tanzania

WODINET – Tanzania Women with Disabilities Network

Executive summary

This assessment study profiles the digital readiness of Tanzanian Local NGOs working with People Living with Disabilities (PLWDs). The vital role played by these organisations in improving the quality of lives of PLWDs and their inclusiveness in the digital innovation space is what called for this study. Based on the four pillars of digital readiness developed by the Pathway Commissioner, the study looked at the how NGOs working with PLWDs use digital technology including various infrastructure and tools that enable digital technology to flow. The study also assessed how ready are the workforce in these organisation to take up and drive digital technology, particularly their level of education, digital literacy which provides skills necessary to effectively use digital technology in their day-to-day operations and service delivery to their benefiter. Financing digital technology and regulating its usage through policies was also assessed amongst NGOs working with PLWDs.

Interviews with 17 NGOs revealed that, NGOs are not well prepared to take up digital technology. Their infrastructure is underdeveloped, they lack essential digital tools like computers, smartphones and software that could support the use of digital technology. The level of digital skills is also a challenge within these NGOs. The exclusion from the formal and informal training systems results into less access of PLWDs to digital and innovation technologies. The biggest challenges the organisations face is the unreliable access to funding to enable investment in digital technologies and the lack of skills and knowledge of PLWDs around innovation, particularly digital innovation

The findings from this assessment study calls for strategic collaboration amongst the members of the digital innovation ecosystem to enable inclusiveness of PLWDs in all aspects of digital technology growth. Partnerships and networking with local and international players is paramount to build the human, structural and financial capacity of NGOs working with PLWDs to take up and effectively utilise digital technologies. Improving the access to networking opportunities, training, financing and digital skills will enable NGOs working with PLWDs to further embrace digital technology.

1. Background

It's an unargued truth that digital technologies revolutionize every aspect of our life. This has well revealed itself in COVID-19 Pandemic. Digital technologies changed from a luxury tools to a necessity tools for a person to work, buy and sometime move from one place to another.

For people with disabilities, technology makes things possible (Word Bank, 2016). Digital technologies can enable persons with disabilities to use voice, text, gesture to engage with people, access education, employment, e-governance and civic participation, financial inclusion, and disaster management (World Bank, 2016).

Despite this importance, persons with disabilities particularly in low- and middle-income countries face significant challenges in accessing and use digital technologies and find themselves digital excluded (Word Bank, 2016).

In countries with limited resource such as Tanzania, Government alone can't solve digital exclusion problem of person with disabilities. Non-Governmental Organization can play an important role in digital inclusion of persons with disabilities (NetHope, 2018).

To play this role, NGOs needs to be digital ready by having key infrastructure to access digital technologies, digital human capital to foster digital adoption, finance and enabling policy for digital uptake. (Nethope 2018, Pathways for Prosperity Commission (2019).

This report outlines digital readiness of Tanzanian NGOs working with person with disabilities. The report is result of qualitative research conducted by Meltores Professional – a Tanzania based research firm. The research involved 17 NGOs working with person with disabilities in Dar es Salaam (11) and Iringa (6).

Digital readiness framework that has four pillars for countries or organizations to get digitally ready; infrastructures, people, finance and policy (see Pathways for Prosperity Commissions 2020) used for analysis. The four pillars are essential for an inclusive growth in the digital age, and in this report, we use the pillars to highlight weak areas which needs further actions.

The report highlights digital innovation ecosystem of Tanzania and position of NGOs in innovation ecosystem, how Tanzanian NGOs working with PLWD use digital technology, their digital strength and gaps opportunities for networking and collaboration.

2. Overview of Tanzania Digital Space.

2.1 Tanzania Digital Innovation Ecosystem

Tanzania is amongst the countries that perform well in innovation and digital growth above what was expected in the innovation for its level of development.

The Global Innovation Index 2020 ranks Tanzania the 1st among the 16 low-income group economies in Innovation development . The country's rate of internet penetration is estimated at 46% by 2020 according to Tanzania Communication Regulatory Authority July -September 2020 quarterly communication statistics report.

Tanzania benefits from a relatively closely interlinked innovation system among other indicators. The innovation ecosystem of Tanzania is continuously transforming into one of the diverse ecosystems in Africa.

Players are increasingly emerging into the ecosystem with diverse roles that they play to take the innovation journey further especially within technology and digital innovation (Sahara Ventures,2019),

Recently there has been an increase of both public, private and development sectors working with innovation hubs to bring about innovation that impacts different sectors in the social economy.

Female led innovation programs such as 'Ndoto Hub', 'Safe Spaceco', 'She Codes For Change' and 'Apps and Girls' are increasingly supporting women and girls developing their digital technology skills, building confidence and exploring opportunities to better their lives 9(Sahara Ventures,2019).

Universities are also playing a role in enriching the ecosystems by providing spaces and allowing collaboration between the academia and other players of the ecosystem (Sahara Ventures,2019).

As part of the ecosystem, the international donor community and private investors have also been contributing to the building and strengthening of Tanzania innovation ecosystem through the direct funding, venture capital and collaboration with Tanzania players (Sahara Ventures,2019).

2.2 Tanzanian NGOs In The Digital Innovation Ecosystem

Civil societies such as Change Tanzania, Haki Elimu, Policy forum, Legal and Human rights Commissioner, Msichana Initiative and other reputable advocacy NGOs have exhausted the advantages of social media to increase online participation of citizens that improving Tanzania moving upwards in the ranks of Global Innovation Index in e participation .

For over a decade, local NGOs have been noted to play an important role in empowering community particularly marginalized groups, women, people with disabilities and the poorest to take part in and benefit from development initiatives all over Tanzania. NGOs have proven well the ability to reach unreached sometimes much impactful than private and public sectors.

However, when it comes to digital technologies and innovation, most of local NGOs in Tanzania have lagged behind compared to the private and public sector. These NGOs are still operating in business-as-usual mode. In comparison, NGO's advocating civil and political rights are doing well in innovation and technology compare to NGOs that are advocating social, economic and cultural wellbeing.

With sustainable development goals emphasis' on inclusion and leaving no one behind by 2030, local NGOs can be more inclusive with efficient utilization of digital opportunities and country digital innovation performance. The existing technologies if well utilized can enable NGOs to be

more participatory in designing, implementation and monitoring of their programs. Digital technologies will enable NGOs to be more transparent on the operational and impact demonstration, collect disaggregated data as well as improve their accountability to their beneficiaries, donors and government.

For Tanzania's local NGOs to benefit from the country innovation performance and system, they need to be digital ready by creating an enabling environment that will foster digital innovation in their organization. These include enabling digital infrastructure, digital skilled staff, finance and digital policies.

About This Report.

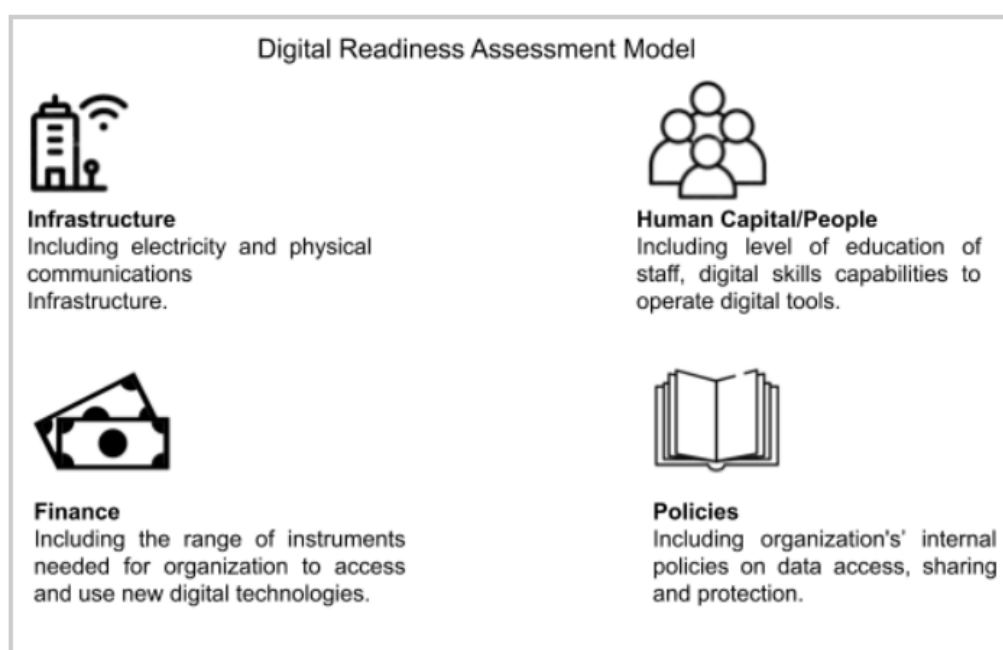
This report outlines digital readiness of Tanzania local NGOs working with people living with disabilities (PLWD). It outlines

- Their use of digital technology,
- Their digital strength and gaps
- Opportunities for networking and collaboration between local NGOs supporting PLWD and digital innovation ecosystem stakeholders.

A total number of eleven and six Local NGOs were visited to assess their digital readiness in Dar es Salaam and Iringa, respectively. In Addition, the study team visited one start-up and innovation hub in Dar es salaam who had worked with local NGOs in digital solutions to understand their experience.

Four Pillars of digital readiness as suggested by pathway commissioner used to assess digital readiness of the visited NGOs. These four pillars are essential for an inclusive growth in the digital age.

The assessment was done through **in-depth interviews** with Top organization management, field and administration staffs.



Source: Pathways for Prosperity Commission. (2020) Digital Economy Kit

Figure 1: The Snapshot of the Report

3. About Local NGOs Working with People Living With Disabilities

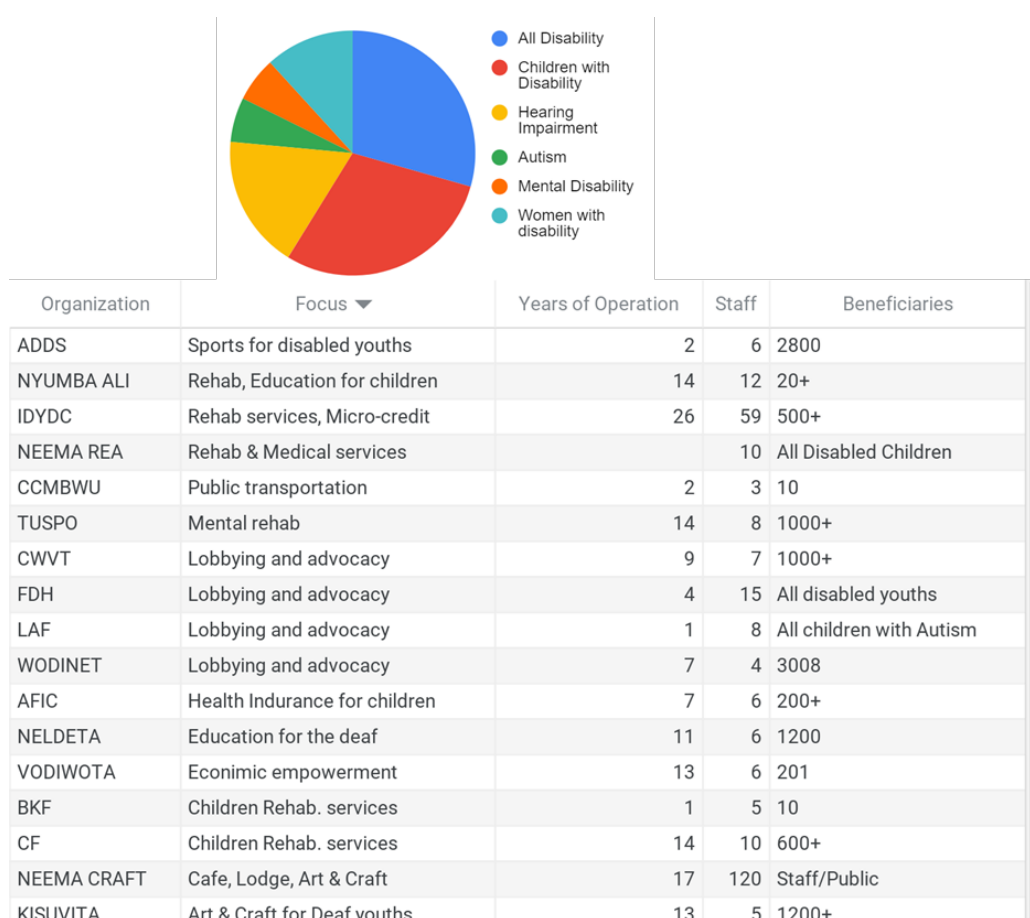


Figure 2: Profile of Local NGOs working with People Living with Disabilities in Iringa and Dar es Salaam.

Most of the interviewed organization are member based. For a member-based organization, beneficiaries need to be a member of the organization to benefit from services provided by the organization. While the other organizations operate in a locality setting.

Majority of the interviewed NGOs were locally founded by Tanzanians and managed by the Tanzanians through their member boards. Three of the NGOs were managed by international staff who were employed by the international organizations that had founded these local NGOs. All these three NGOs are in Iringa. One NGO in Iringa is managed by local Tanzanians with some of their management decisions made by the founders of the organization in Italy.

Combined, the interviewed NGOs employed 293 staff among which a total of 34 staff were interviewed for this study. About 75% of staff were paid salaries through the projects managed by the organizations. The remaining 25% staff were volunteering and only got paid allowances when there are events, workshops or specific projects to run.

About 80% of the management and staff of the NGOs were PLWDs themselves. The remaining 20% included the sign language interpreters for the deaf, few project staff and managers who were foreigners.

4. How Local NGOs Working with PLWD Use Digital Technology?

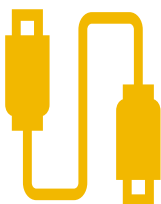
In assessing how local NGOs working with PLWD use digital technology, we examined working space, access to electricity, access to the internet, access to digital tools and technologies and procurement of digital infrastructure. According to Pathways for Prosperity Commission (2018) These key indicators helped us to understand the level that these organizations can adapt or improve digital innovation for more efficiency and service delivery.

4.1 Access to Working Space



Having office premises enables organizations to put other infrastructure for using digital technology. With the exception of two organizations, all interviewed NGOs had offices from where they operate. This can be an important base for the NGOs to digitally operate.

4.2 Access to Electricity



All the NGOs interviewed had access to electricity supplied by The Tanzania Electric Supply Company Limited (TANESCO).

Cost of electricity showed a great variation from one NGO to another. The cost of electricity per month ranged from 20 000 TZS to 250 000 TZS (7.4 Euro to 92.6 Euro). Median electricity for the NGOs interviewed is 60 000TZS (22.2 Euro). The Organization used either funds from their existing projects or management personal fund to pay for electricity

4.3 Access to Internet

I often email embassies looking for fund, they often respond immediately ...but I respond two or three days later as I have limited access to internet because of fund and sometime reliable digital devices.

Director... KISUVITA.

The organizations access internet either through mobile sim enabled (router/modem) or mobile hotspot on their smartphones. Most of them are not happy with internet speed. Only three organizations that use high tech connection said that the internet connection is reliable with good speed.

Organizations interviewed show significant variation in terms of monthly cost of internet. The lowest reported monthly internet cost is 10 000 TZS (3.70 Euro) and the highest is one million TZS (370.37 Euro). Only six organizations interviewed, the offices pay for the internet, while one organization had their WIFI router and one-year internet access donated by an internet company, and the remaining 11 staffs uses their personal fund to access internet.


The unreliability of internet access means that the NGOs are not able to get information that they could otherwise benefit from such as call for project proposals as well as learning about various digital technologies that are out there.

4.4 Access to Digital Tools and Technologies

All organizations interviewed owned at least a laptop or desktop and/or smartphone that could be connected to the internet. Most of the digital devices and tools used were either donated or bought by the founders and staff of the organizations.

In all interviewed organizations there was equal access to available digital devices depending on the tasks and how much the tasks needed a digital device.

Except for two organizations, all other interviewed organizations did not have designated personnel for daily maintenance of the available digital devices and tools, in this organization maintenance is either done by volunteer ITs personnel or when needed they hire IT personnel for maintenance.



"The problem is we don't know what is out there in terms of digital technology and software or systems that we could benefit from, that is why we do remain blind of technology". Pastor Joseph... NELDETA.

In most of the organizations interviewed, the organization management board made procurement decisions including procurement of digital infrastructure except in one organization which depended on the donation of digital infrastructures. Although some decisions were made, no procurement process was done except for well-established organizations such as IDYC and TUSPO. In organization like Call for Africa, the procurement process decision was made by their supporting organization in Italy and Neema Craft and Neema Rehabilitation the procurement process handled by the church which was their main financier.

4.5 Use Of Digital Technologies

All NGOs do use the day-to-day software to operate such as Microsoft Office Applications, Email and Internet, various search engines and few do use online meetings like Zoom and Skype especially during the COVID-19 pandemic. Only two NGOs used accounting packages, one of the two also use Point of Sales (POS) and Inventory software in the social enterprises they run.

All the available infrastructure within these NGOs were accessible by the management and some of the operational staff who do day to day work, but most of the beneficiaries of the NGOs' services could not access the technologies. Communication from the organization to these beneficiaries was mainly in person and through calling and SMS. Few had smartphones hence communicate through social media commonly using WhatsApp groups.

An interesting finding was the vast use of WhatsApp video calling among the people with hearing impairment who use sign language to communicate while seeing each other through the video call. A program officer of one of the NGOs for the deaf explained that the use of WhatsApp video calling enables people with hearing impairment and speech disabilities to communicate easily. This sentiment was mentioned by three other NGOs that work with people with hearing impairment. This shows that the benefits of digital technology are recognized by the PLWDs.

“While other people can see WhatsApp video calling as a luxury, to us deaf people it is a very important and helpful technology which enable us to communicate easily and understand each other. We are grateful for this technology”. Program Officer – NGO working with people with hearing impairment.

4.6 Conclusion on NGOs Use of Digital Technology .

While overall, most of the organizations used basic digital tools, only one NGO reported to use assistive technology for children, and one organization is more reported to use special computer programs for school children with physical disabilities. One of these programs developed to enable children to type in the computer using their feet. They also had a special keyboard for a child whose hands cannot stay static, which helped him not to type using wrong keys. A foot operated mouse and tablet for handicapped kids were also being used. All these tools were rather expensive, and the NGO that had them depended on donations from the Organization founder’s friends in Italy. (See Annex 2)

“ We do understand the importance of digital technology in our lives and working with PLWDs, but we feel very unequipped to utilize the technology. We don’t have skills and knowledge of the digital technologies, we also lack equipment as you can see, we only have two computers that all officers depend on, so we have to work in turns”.

When asked how well the organization is digitally equipped to take advantage of digital technology in terms of digital infrastructure, all organizations except one organization felt that they were not well equipped as they lack necessary digital tools such as tools for data collection, accounting, tools for connecting with beneficiaries, tools for learning; enough device for every staff as other staff use their own device as well lack of designated personnel for digital infrastructure maintenance and advise.

4.4 Recommendation on NGO’s Use of Digital Technology

1. Organisations working with PLWDs require support in building the infrastructure that will allow creation, usage and sharing of digital technology. Tools for digital technology like computers, smartphones are crucial as well as systems and software.
2. Introduce the organisations to the available digital tools especially mobile phone supported digital tools that they can easily use to make their operations and service delivery more effective. Tools such as data collection tools (ODK, KOBO), social media management tools, Accounting, cloud working tools, can be easily adopted by the organization as most require only mobile phone and basic digital skills to use it.
3. Effective and creative use of social media can be of great benefit to the organisation and PLWDs in communication internally and externally. This will help increase the visibility of the organisations to donors and beneficiaries, promoting the work they do and collaboration with stakeholders and other players of the digital ecosystem, including donors. The

organization can be supported through capacity building training on use of social media for good course.

4. Support the organisations to use social media in communication internally and externally, promoting the works they do and collaboration with stakeholders and other players of the digital ecosystem for example use of WhatsApp Video Calls for people with hearing impairment where they can use sign language to communicate.

5. How Ready is Local NGOs' Workforce for Digital Transformation?

Digital strength of the organization depends on the level of readiness of the organization workforce to transition into digitized workflows that are enabled by software and technology. Organization's workforce are the ones that drive technology and hence remain a very crucial driver of organization digital innovation.

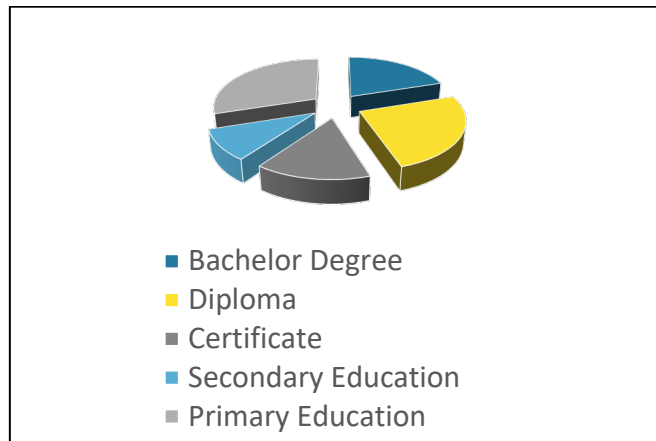
In understanding the capabilities of local NGOs working with PLWD to navigate digital systems, this report outlines the level of education of staff working in these organizations, basic and advanced digital skills they possess to operate digital tools from using simple mobile phones to smartphones to navigating computers and the internet.

5.1 Education Level

The level of education has direct impact with digital adoption. In Tanzania, for example whereby majority speak Kiswahili, digital tools with English manuals/guide make difficult for people with primary education to understand various feature with no guidance. For effective utilization of digital tools, organization workforce should be able to navigate through various feature with minimal guidance

About 30% of staff in the interviewed organization had highest level of education of primary education, while majority had either diploma, certificate or secondary education. Table 1 below shows highest education level of interviewed staff in NGOs working with PLWDs.

Table 1: Highest Education Level of Staff working with PLWD



Only 20% of the organization working with People living with Disabilities had at least a bachelor degree.

5.2 Digital Skills

Digital skills were measured using three levels developed by the International Telecommunication Unit (ITU), which includes basic, intermediate and advanced levels (Coward & Fellows 2018). This study found that the levels of skills that exist within the organizations working with PLWDs varies along the three levels.

5.2.1 Basic skills

5.2.1.1 Basic Computer Operation

All interviewed NGOs reported that their management and staff could perform the basic digital tasks in computers, including Microsoft Office applications particularly Word and Excel, sending and receiving emails and searching the internet sites through various search engines like Google, Mozilla Firefox and Internet Explorer. Less than ten interviewed staff knew how to use google online forms.

5.2.1.2 Basic Smartphone Operation

All interviewed staff could set up their smartphones, download and install applications and use social media for personal interactions and also for work communication like WhatsApp groups. They all could also use Mobile financial services like M-Pesa, Airtel Money and Tigo Pesa and also setting up different kinds of privacy and security measures like passwords, patterns and PINs.

5.2.2 Intermediate skills

Among the Interviewed staff, about 10 of them had intermediate level digital skills where they were able to operate the publishing and visualisation programs as well as digital production and graphic designing. A handful of people do use online meeting platforms like Zoom and Skype and advanced excel tools for budgeting and simple data analysis.

5.2.3 Advanced Skills.

Regarding the advanced digital skills, only two organizations had at least one staff who had little knowledge of computer programming, coding and networking, but were not using these skills in their day to day work as within the organizations there is no role that require them to use these skills hence remaining dormant, creating a need to be re-activated and practiced. There was no knowledge of artificial intelligence among all the interviewed organizations.

TUSPO and IDYDC organizations effectively used social media to promote their work and events they hold in the communities through Facebook and Instagram pages as well as YouTube channels.

Although there were 5 NGOs with organization websites, they lacked personnel with skills to manage and update the information in the websites. They only depended on the companies that developed the websites to help them frequent updating. This affects the quality of the websites as they are not frequently updated.

5.3 On-Job Training

Only six NGOs mentioned that their staff have had some kind of ICT training either on the job or through attending training. The training covered basic computer training through to social media management for public postings. Other trainings were about mobile data collection, email etiquette and security when using the internet. Most of these trainings were provided for free by external institution and internally by the organisation.

5.4 Conclusion on the Workforce Digital Readiness.

The organisations knew that they had a gap in digital skills, but the lack of reliable financing for developing the skills hindered them from making plans and strategies for improving digital skills of their staff. A director of the Association of Teachers with Hearing Impairment explained their plans to provide Information and Communication Technology (ICT) training to Secondary School youths but had not been able to do it due to lack of funding for digital equipment and to hire trainers.

During the interview with one of staff from Sahara Ventures on their experience working with PLWDs in digital innovation space highlighted significant digital literacy gap among PLWDs compared to other people. According to the interviewee the gap in access to education systems is also affecting the access to digital education by PLWDs, hence the design of digital programs for inclusion of people with disabilities should take a different approach from the current approach.

“When we organise Innovation challenges, we need to treat PLWDs differently as their understanding and skills are lower and we need more time to bring them to the same level as other people who have had more exposure to technology” Adam Rowland, Sahara Ventures.

5.5 Recommendation on the Workforce Digital Readiness

1. In order to build an inclusive digital ecosystem, the digital literacy and skills of the PLWDs need special strategic plans. These plans have to start at the tertiary and vocational institutions with programs targeting to build the digital capabilities of PLWDs. This is because of the educational and skills gap that already exist between PLWDs and other groups of people due to the social-economic divide existing in the society.
2. The organization workforce can be supported through capacity building training on simple technology tools such as use of social media, blogs for good course.
3. Organise events, meet-ups and experience sharing sessions between the organisations and other players of the ecosystem to expose them to various technologies and to learn from others. This will also foster networking, collaboration and funding opportunities.

6. How do Local NGOs Finance and Regulate Digital Technology

6.1 Financing Digital Technology

As all other innovations, digital innovations require financial investments. Developing both infrastructure and human capital need to be financed. Assessing the organisation strategies on financing digital innovation is key to identify its readiness to become digitally ready. This includes how much the organisation is willing to and able to spend on digital technology like software, hardware, systems and training. Assessing the prices at which the technology is obtained also highlights the affordability based on the financial position of the organisation. Different financing avenues available to the organisation also helps to understand if they would afford to invest on digitization and make it sustainable and scalable.

6.1.1 Financial Strategy

There were no strategies specifically for improving digital technology financing amongst all the interviewed NGOs. According to them, this was not because they ignored digital technology financing, but they did not have knowledge of how to develop strategies for fundraising for digital technology.

6.1.2 Budget

There was also no specific budget allocated for financing digital technology including financing infrastructure, tools and skills enhancement. It was learned from the interviews that; the NGOs do developed proposals for various projects but has no skills and knowledge of how to develop proposals for funding digital technology.

6.1.3 Conclusion on Digital Finance

Overall with regards to digital financing within the NGOs working with PLWDs, this study revealed that all of the organisations participating in the study, financing was the biggest challenge for them in embracing digital technology. Although they agreed that they lacked information, skills and knowledge on digital technology, but they focused on securing funds for their primary projects hence not making financing digital technology a priority.

We don't have any funding to provide the core services to the people with disabilities like awareness seminars to know their rights, lobbying and advocacy to the government. It is not possible to think about buying another computer". Rebecca, WODINET

6.2 Policy And Regulations Around Digital Communication

The organizations' internal policies and regulation plays a crucial role in facilitating digital technology. Understanding if the organization has got policies around how technology is used such as the role of the IT department or who is the custodian of digital technologies and tools, what role each staff play, the leadership decision making processes, how is data creation, data sharing and data storage managed is very crucial in understanding organization digital readiness.

Among all the four pillars of digital readiness, the policy and regulations are the least developed amongst all NGOs interviewed. With the exception of one organization which had social media management rules and another organization with different rights to access digital systems and approval levels, there were no policies that exist around cyber security, what to share with the public and under which processes. This was because of the low level of digital technology use and lack of knowledge about policies that guide digital technology including information creating, sharing, storage and data security. There were minimal regulations within the NGOs as to who access and manage the organization communications like emails and speaking with the external audiences. Not having knowledge about what to include in the policies and how to implement them was mentioned as the challenge. The level of digital use in these NGOs was also very low which made them not to think much about policies and procedures to guide them.

6.3 Recommendation on improving the NGOs Digital Finance and Policies.

1. Capacity building on digital financing strategy including fundraising is important to enable organisations working with PLWDs access funds and plan for their digital technology financing.
2. The available organization's policies and regulations around digital technology need to be simplified and shared to the organisations working with PLWDs so they can adapt them to their context and environment to guide them on their digitization journey.

7. Level of Collaboration Between Local NGOs and Digital Innovation Stakeholders in Digital Inclusion of People With Disabilities.

7.1 Opportunity

Being part of the ecosystem, local NGOs have more to gain by collaborating with other players of the ecosystem, being it local, national, regional or international. Technology facilitates interconnectedness within the innovation ecosystem, and so collaborating makes innovation more impactful. With collaboration, organisations can learn what others are doing, what technologies and tools are out there that they can either adapt, learn for or even co-create solutions with other similar players. With collaboration, organisations can share infrastructure and skills which will result in reduced cost of financing digital innovation and with clear policies around data sharing and security, the entire ecosystem benefits from digital innovation.

7.2 Reality

Assessment on level of collaboration between interviewed NGOs and other sectors found out that, overall, there very minimal collaboration existed between the NGOs and other players of the digital ecosystem being national or international.

In case where there a bit of collaboration was mainly on the funding for digital equipment and digital services from public and private companies and individuals. One NGO received a donation of funds to purchase a desktop computer from a public entity, Tanzania Telecommunication Authority, and several other NGOs had desktop computers, and printers donated to them by private digital and telecommunication companies and individual members of the public. One NGO had donated WIFI internet routers and a one-year wireless unlimited internet access for their two offices. Another NGOs received donation of assistive technology from friend organization based in Italy

This collaboration highlights the opportunities that exist between the players of the digital ecosystem that can be explored more to include other players like developers, other public and private financiers and even amongst the users of digital technology including the NGOs. There is bigger room for collaboration that can be tapped into.

The opportunity also exists within the International NGOs community to support the growth of digital technology among PLWDs in Tanzania. The areas that International NGOs like Fingo and others can support are around digital skills development amongst the organisations that work with PLWDs. This can be through trainings and experience sharing opportunities with other players of the digital ecosystem like innovation hubs. International NGOs can also support acquiring of digital tools like computers, software that can be used to ease their day to day operations. There is also opportunity for the Local NGOs to learn from International NGOs which are advanced in digital technology use

Tanzania Innovation ecosystem is completely unfamiliar to all organisations interviewed for this study. Even after explaining to them what the Innovation ecosystem means, they could not relate much to it and only saw their role in the ecosystem as the users of Innovation. To them innovation is just the development of new technologies which they could use in their day to day work only when they get exposed to digital technology

On the other hand, during the interviewee with one Tanzania startup and innovation hub, it was also

revealed that the digital champions have little understanding about NGOs that works with people with disabilities in term of their needs and context of how they work. Lack of understanding of each other's context and needs cause low level of collaboration between NGOs working with PLWDs and the innovation. Innovators from AMCET startup explained the need to understand the challenges faced by PLWDs and the PLWDs need to understand digital innovation opportunities is and how can they shape digital innovations to address the challenges they face. It is by this understanding that a meaningful collaboration can be fostered.

So far, we have identified the following digital innovation stakeholders and NGOs that works in digital inclusion of people living with disabilities:

1. Sahara Venture through [AMUA II Accelerator](#) - An Accelerator program that focuses on identifying, accelerating and scaling innovative inclusive solutions that aim to address challenges related to sexual reproductive health focusing on people with disability. The project is implemented with United Nation Population Fund (UNFPA) in collaboration with Sahara Venture.
2. Digital Opportunity Trust (DOT) Tanzania – implemented the pilot project “Entrepreneurship Development Program for Youth with Disabilities (EDP4YD)” with the aim of empowering people with physical disabilities in entrepreneurship, business, ICT skills and hard skills training.
3. Tanzania Empowerment for Persons with disability and Gender Health Organization – in a year 2018, the organization seeks \$6,736. In Global Giving to fund an innovative computer education program for deaf pupils in Pomerini deaf unit in Iringa Distric. However, during data collection we were unable to get the organization contact to understand the experience in implementation of this project

Overall, to improve the collaboration between local NGOs and other innovation key players, this report encourages the establishment of supportive collaboration between Local NGOs working in disability inclusion with other Tanzania NGOs, government institutions and International NGOs to enable digital innovation growth especially in the areas of skills development, financing and digital tools like computers, mobile phone both feature and smartphones and software.

8. Digital Inclusion of Local NGOs Working with People Living With Disabilities.

Every organization begins their journey of digital innovation by employing technology as a utility to accomplish specific tasks as highlighted in highlighted in the Digital Nonprofit Ability (e.g. create documents with an office suite, connect people and information with a data network, or store information in functional systems) and to communicate through emails. Technology is perceived as a requirement of the modern way of working, but not as a strategic or transformative asset. Staff are often trained on “how to use” a specific application or technology, and processes. Data is typically in silos, only rarely shared across program or functional areas on an as needed basis (such as to produce reports or for specific analytical efforts). Staff typically view technology as a specialty managed exclusively or almost exclusively by the IT function.

The digital readiness among the NGOs interviewed for this study show that they are not well placed to benefit from opportunities brought by digital technology. Based on the four pillars that define digital readiness, All the NGOs are placed at the very basic level of being ready for digital growth.

Although all NGOs have some kind of infrastructure and their staff are equipped with basic to intermediate digital skills, they are very underdeveloped in the areas of financing digital technology and there are no policies and regulations that govern the digital technology use within the organisations. Knowledge of the existing digital technologies and how these technologies enable NGOs to work more effectively is also lacking in almost all of the interviewed NGOs.

Generally, despite the low level of the organization to embrace digital opportunities due to finance especially and lack of exposure to suitable digital tools, all organization interviewed might have the widest benefit from embracing technology.

The following are recommendations for Local NGOs working for disability inclusion in bridging the disability divide through digital technologies:

3. Organisations working with PLWDs require support in building the infrastructure that will allow creation, usage and sharing of digital technology. Tools for digital technology like computers, smartphones are crucial as well as systems and software.
4. Introduce the organisations to the available digital technologies especially mobile phone supported digital tools that they can easily use to make their operations and service delivery more effective. Tools such as data collection tools, social media management tools, Accounting, cloud working tools, can be easily adopted by the organization as most require only mobile phone and basic digital skills to use it.
5. Effective and creative use of social media can be of great benefit to the organisation and PLWDs in communication internally and externally. This will help increase the visibility of the organisations to donors and beneficiaries, promoting the work they do and collaboration with stakeholders and other players of the digital ecosystem, including donors. The organization can be supported through capacity building training on use of social media for good course.
6. Support the organisations to use social media in communication internally and externally, promoting the works they do and collaboration with stakeholders and other players of the digital ecosystem for example use of WhatsApp Video Calls for people with hearing impairment where they can use sign language to communicate.
7. In order to build an inclusive digital ecosystem, the digital literacy and skills of the PLWDs

need special strategic plans. These plans have to start at the tertiary and vocational institutions with programs targeting to build the digital capabilities of PLWDs. This is because of the educational and skills gap that already exist between PLWDs and other groups of people due to the social-economic divide existing in the society.

8. Capacity building on digital financing strategy including fundraising is important to enable organisations working with PLWDs access funds and plan for their digital technology financing.
9. The available organization's policies and regulations around digital technology need to be simplified and shared to the organisations working with PLWDs so they can adapt them to their context and environment to guide them on their digitization journey.
10. Organise events, meet-ups and experience sharing sessions between the organisations and other players of the ecosystem to expose them to various technologies and to learn from others. This will also foster networking, collaboration and funding opportunities.
11. Encourage and support collaboration with other Tanzania NGOs, government institutions and International NGOs to enable digital innovation growth especially in the areas of skills development, financing and digital tools like computers, smartphones and software.

References

- Boutheina Guermazi (2016) Watching Tanzania leapfrog the digital divide <https://blogs.worldbank.org/digital-development/watching-tanzania-leapfrog-digital-divide>
- Cornell University, INSEAD, and WIPO (2020). The Global Innovation Index 2020: Who Will Finance Innovation? Ithaca, Fontainebleau, and Geneva.
- Coward, C & Fellows, M 2018, Digital skills toolkit, International Telecommunication Union, Geneva, Switzerland.
- Gartner, Inc., Stamford, CT, USA, Tech. Rep. G, 273142. Yoo, T, de Wysocki, M & Cumberland, A 2018, 'Country Digital Readiness: Research to Determine a Country's Digital Readiness and Key Interventions', URL: <https://www.cisco.com>.
- Kemp, S 2019, 'Digital 2019: Global Digital Yearbook', London, We Are Social.
- Net Hope: The Center for the Digital Nonprofit. (2018) The Digital Nonprofit Ability™ Assessment; https://logcluster.org/sites/default/files/gm_files/the-dna-assessment-white-paper-2018_microsoft.pdf
- Pathways for Prosperity Commission. (2019). The Digital Roadmap: how developing countries can get ahead. Final report of the Pathways for Prosperity Commission. Oxford, UK.
- Pathways for Prosperity Commission. (2020) Digital Economy Kit: Harnessing digital technologies for inclusive growth: Pathways for Prosperity Commission Technology & Inclusive Development: pathwayscommission.bsg.ox.ac.uk/digital-economy-kit
- PWC, (2017) Ceosurvey. Pwc: 20 years inside the mind of the CEO...What's next? <https://www.pwc.com/gx/en/ceo-survey/2017/pwc-ceo-20th-survey-report-2017.pdf>
- Sahara Ventures (2019) Silicon Dar: Unveiling Tanzania First Technology District. <https://saharaventures.com/publication>
- SHB real estate (2020) The Importance of Digital Readiness: <https://medium.com/shb-realestate-blog/the-importance-of-digital-readiness-1bdf6693a72e>
- Walker, M., & Cearley, D. (2015). The top 10 strategic technology trends for 2015.
- World Bank (2016) Bridging the Disability Divide Through Digital Technologies: Background Paper for the 2016 World Development Report: Digital Dividends by Deepti Samant Raja.

Annexes

Annex 1. Observation Matrix

DIGITAL READINESS AMONG TANZANIAN NGOs WORKING WITH PEOPLE LIVING WITH DISABILITIES

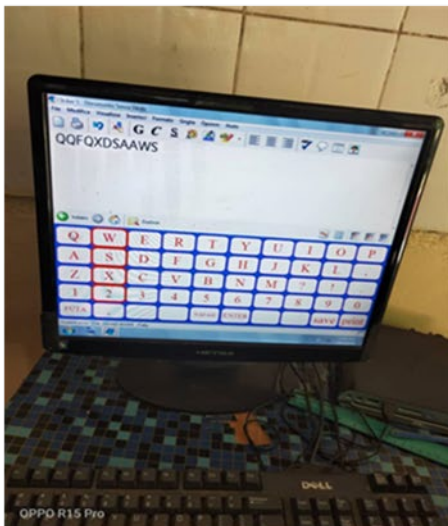
DIGITAL READINESS OBSERVATION MATRIX

INDICATOR	OBSERVATION	REFLECTION
Availability of physical infrastructure like computers, laptops, smartphones, office networks		
Use of the digital technologies, soft wares		
Power supply, electricity, generator, solar supply		
Written digital technology policies and guidelines		
Staff comfortability and easiness in operating various digital technologies and tools		

Annex 2. Assistive Technologies Used by PLWDs



Special Covered Keyboard



Writing Software



Foot operated Mouse



Annex 3: Overview of the Interviewed organizations.

Organisation	Description	Website	Location	Year established	No. of Staff	# of beneficiaries
New Life for the Deaf in Tanzania (NELDETA)	Organisation was founded under the church called 'Emanuele Viziwi', now separately managed from the church to support the deaf especially women, widows and the orphans. they support them with education needs for the children and with microloans to women to be able to manage their lives better	No	Dar es Salaam	2009	6	1200
Chama cha walimu viziwi TZ	Tanzania Association of Teachers with Hearing Impairment (TATHI-Tanzania) was formed by Deaf Teachers themselves for the purpose of advocating for and promoting the rights of Deaf students to equal education accessibility in Tanzania.	www.cwuf.or.tz	Dar es Salaam	2011	7	Over 1000
Chama Cha madereva wa Bajaji wenye ulemavu	Lobbying for the rights of the Disabled Bajaj drivers, working around Dar es Salaam city. Collective facilitation of loans from the Municipal Offices to better their lives	No	Dar es Salaam	2019	3	10
Tanzania Users and Survivors of Psychiatric Organisation (TUSPO)	TUSPO is working on restoring rights, provision of mental health care dignity and equality of people with psychosocial problems. TUSPO is a membership-based organization. Currently, TUSPO operates in 10 regions in	https://tuspo.or.tz	Dar es Salaam	2006	8	

	13 districts in Tanzania. – Kigoma, Tabora, Dodoma, Manyara, Dar Es Salaam, Kilimanjaro, Morogoro, Iringa, Lindi and Mara.					
Tanzania women with disabilities network (WODINET)	Lobbying and advocacy on behalf of women (18years and above) and others with disabilities, Conduct self-awareness seminars and workshops to women with disabilities collaborate with police, social welfare offices on issues affecting the rights of women with disabilities	No	Dar es Salaam	2013	4	3008
Foundation for disability hope	Lobbying and advocacy for challenges of people with disabilities About laws, policies that affect PLWDs Infrastructure for PLWDs, Employment rights for PLWDs	No	Dar es Salaam	2016	15	All disabled youths in sports and culture
The voice of disabled women in Tanzania (VODIWOTA)	Support education of women and girls LWDs by advocating to parents and stakeholders, looking for donors to support education of PLWDs. Train women and girls LWDs through VETA and SIDO vocation trainings	www.vodiwota.org	Dar es Salaam	2007	9	201
Afri Disability development and solutions	All sporting and cultural programs for the deaf in Tanzania. Training, sensitization and implementation of sporting and cultural activities	No	Dar es Salaam	2019	6	2800
Lukiza Autism Foundation	Raise awareness about people with autism and how they can be supported with services of education, rehabilitation and behaviour therapies	No	Dar es Salaam	2020	8	All people with Autism
Kituo cha Sanaa na Utamaduni kwa Viziwi Tanzania	Lobbying and advocacy for the rights of people with disabilities Supporting disabled					

(KISUVITA)	youths to use their artistic talents by engaging them in artistic activities like drawing pictures to sell, sewing clothes, participate in beauty pageants specific for people with disabilities in Tanzania, Africa and at the global level	No	Dar es Salaam	2007	5	Over 1200
Africa Foundation for Inclusive Communities (AFRIC)	Formed by people with disabilities and those without with the aim of building a new African generation that Understands, Values and Develops people with disabilities abilities and talents	http://www.africanictz.org	Dar es Salaam	2013	6	
Iringa Development of Youth Disabled and Children Care (IDYDC)	IDYDC exist to improve the living standard of the disadvantaged people (needy children, PLHIV's, youth, widows, widowers and poor people) in Iringa region through establishment of rehabilitation and vocational training centres. Also facilitating the establishment of savings and credit schemes and training on HIV/AIDS, alcohol prevention among youth and drug abuse, gender, child labour, and the right of the child by organizing drama and sports	https://www.idydc.or.tz	Iringa	1994	59	Over 500
CALL AFRICA	Provision of rehabilitation physiotherapy for disabled kids from 0-16 years Using Community based rehabilitation concepts to reach more children Identify Kids with disabilities, train the community on how to care for them provide physiotherapy	https://callafricanicango.weebly.com	Iringa	2006	10	Over 600

	services at the space given by local community 8 centres in Iringa Municipal, and Iringa rural					
Neema Rehabilitation	A project of the Anglican Church of Tanzania, Diocese of Ruaha, specialized for consulting and treatment of disabled persons, particularly children	https://www.neemarehabilitation.org/en	Iringa		0	
Neema Craft	A project of the Anglican Diocese of Ruaha in Iringa, Tanzania to meet the training and employment needs of the many people with disabilities in the area. Have three Social-economic enterprises namely Neema Craft workshop and shop, Neema Guest house and Neema Café	https://www.neemacrafts.com	Iringa	2003	120	Staff/Public
Nyumba Ali (Nyumba Azimio lenye imani)	Provide education and rehabilitation services to children with disabilities. life skills through vocational training and workshop, Integrating kids to the mainstream education system. Every parent with child at the centre becomes a member of the organisation.	No	Iringa	2006	12	Over 20
BKF	Provide rehabilitation services to kids with disabilities Farming to provide food for the families of kids with disabilities, Home visits to families with disabled kids 0-16 years	No	Iringa	2020	5	10