East African Communications Organisation

Communications for all in East Africa

EACO UNIVERSAL ACCESS & SERVICES TOOLKIT

&

DIGITAL INCLUSION STRATEGY

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ABSTRACT

The Universal Access and Services to ICTs is a global initiative to ensure access to ICT services to all and close the digital divide. The aim of Universal Access and Service is therefore the rollout of the infrastructure and making available and affordable useful services in all parts of the countries and to all the sections of the population in order to prevent digital divide between rural and urban areas, between the rich and the poor populations, henceforth building a digitally inclusive society.

The six East African countries have a Universal Access Service (UAS) fund established to facilitate projects and initiatives to ensure that ICT services are availed especially to rural areas and to marginalized communities.

This document provides guidelines on how the UAS fund can be used to achieve universal access of ICT services in East Africa and a digital inclusion strategy for the region.

ACRONYMS

WSIS   World Summit on the Information Society

ITU   International Telecommunications Union

UAS   Universal Access and Service

UASF   UAS Fund

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EACO UNIVERSAL ACCESS AND SERVICES TOOLKIT AND DIGITAL INCLUSION STRATEGY

1.0 INTRODUCTION

The transition of the global economy from industrialized to one based on knowledge and information presents numerous opportunities, but a lot of challenges as well, especially for developing countries. This paradigm shift is enabled by the use of ICTs which have led to the compression of time and space. Characterized by the convergence of different technologies and digitization, the old economic paradigm is being transformed through a new wave known as e-services. With e-services being the broad space in the convergence arena where the internet integrates with other telecommunications based technologies, to create new ways of conducting businesses and livelihood.

For East African populations not to be left out in the information society era, our institutions should focus on creating enabling ICT environments by putting in place the required institutional frameworks and policies to guide the development and implementation of ICT plans that allow our citizens to exploit the benefits of the information society and address inherent challenges that are existing today such as:

- lack of infrastructure;
- prohibitive costs of accessing available infrastructure and services;
- poor quality of infrastructure;
- lack of relevant skills;
- low levels of literacy and poverty; and
- inadequate investment in technological development
- creation of locally useful content and innovation

These challenges, if not properly addressed, will give rise to renewed fears of the digital divide in this new information era. The digital divide being a concept referring to inequalities in ICTs' distribution between developing and developed countries. However today, as opposed to the above classical definition, the digital divide refers to the gap in

the information sphere between urban and rural areas, between the rich and the poor, between male and female, and leaving away people with special needs in a given country.

The aim of Universal Access and Service (UAS) is therefore the rollout of the infrastructure and making available and affordable useful services in all parts of the countries and to all the sections of the population in order to prevent digital divide between rural and urban areas, between the rich and the poor populations, henceforth building a digitally inclusive society.

The six East African countries have a UAS fund established that ICT services are availed especially to rural areas and to a marginalized communities. This document gives strategies of how the UAS Fund (UASF) can be used to achieve universal access and services in East Africa.

One of the practical ways of dealing with the digital divide is ensuring availability of universal accesses and service, coupled with digital inclusion strategies. This document therefore provides a toolkit for universal access and services as well as strategic direction for digital inclusion.

2.0 UNIVERSAL ACCESS AND SERVICE

According to the International Telecommunications Union (ITU), **Universal Access** means that everyone in a population has access to publicly available communication network facilities and services. **Universal Service** on the other hand means that policies in this area generally focus on promoting or maintaining universal connectivity of all households and individuals to public network facilities and services, at affordable prices.

However, while Universal Service and Universal Access policies may differ, both terms can be simplified to mean efforts to promote penetration and tele-density. Thus the aim of Universal Access and Service is the rollout of the infrastructure and making services available and affordable to all the sections of the population in order to prevent the digital divide.

In most cases, *Universal Access and Service* is achieved through a fund created by governments with the aim of promoting the use of ICTs. Though the concept of "Universal

Access and Services" was drawn from the ITU's World Telecommunication Development Conference of 1998; the implementation of the mandate of the fund was inspired by internationally agreed upon strategic indicative targets set during the World Summit for the Information Society in 2003 (WSIS-2003) for improving connectivity and access to ICTs.

2.1 Strategy for the Universal Service Fund in East Africa

Achieving the digital inclusion targets above, implies funding the deployment of digital services by all means including use of Universal Access & Service Fund.

The focus areas of the Universal Access & Service Fund should include the following:

i.   **Infrastructure expansion**:
     Rollout of broadband telecommunications networks to serve remote and unserved areas. This may include support for extending fiber optic backbone links, as well as other broadband last mile connections into locations where low-speed or voice-only networks are deployed.

     This should go together with other plans that include the establishment of electric power grids and roads since in most cases such infrastructures are lacking in many remote places of our countries.

ii. **Rural community broadband connectivity**:
     Support for broadband access connections for local community institutions in rural areas, such as schools, hospitals health centers and local government offices up to the lowest level for information dissemination and uptake. Such projects should include public access facilities such as community ICT centers, public Wi-Fi hot spots, and Wi-Fi offloading in crowded places etc.

iii.   ***Affordable ICT device programs:***

Subsidize, discount, co-financing, and other strategies to assist customers, including individual consumers and local public or small business organizations, to purchase the smart devices, and ICT devices needed to take full advantage of broadband and ICT services.

iv.   ***Other Demand stimulation initiatives*:**

Programs to support public awareness and interest in adopting broadband services, where industry outreach and customer support may be inadequate. These may include community digital literacy initiatives to accompany deployment of broadband access; public campaigns attached to the launch of e-government and other e-service projects in general; support for small entrepreneurs developing targeted ICT applications, etc.

v.   ***Local Content:***

Developing and promoting availability of locally relevant content and application services.

vi.   ***Fostering Innovation*:**

Focus should be made towards funding creativity and innovative ideas in the ICT sector such ICT hubs and incubators.

The six EACO member states have established a Universal Access/service Fund. **Annex 1** contains implementation for the Universal Access/service Fund from the six East African countries with details of how the fund is operated and used.

3.0 DIGITAL INCLUSION

Digital inclusion refers to the fundamentals of building inclusive societies which emphasizes on empowering people to harness the use of ICTs and ensure their social and economic development and participation.

The majority of the East African population resides in rural areas which in most cases are yet to be connected or have the lowest penetration of connectivity due to challenges highlighted above. This creates a huge gap between the connected and the unconnected area/people.

Despite the existence of policies and regulations for promoting connectivity in the East African region, there are still gaps leaving some sections of the populations unconnected. Many initiatives that include Universal Access and Service Fund intervention have been employed for last mile connectivity, and provision of ICT end-user devices to different groups. However, the impact has not been significant in addressing the digital inclusion problem.

Therefore, it is imperative to have strategies of ensuring that we build a digital inclusive society by addressing the barriers.

To attain the targets on digital inclusion, there is a need for developing an integrated policy approach for:

- enhancing infrastructure
- reducing cost of end user devices
- stimulating the development and uptake of relevant content
- and driving digital awareness and literacy campaigns

3.1 Strategy for Digital Inclusion for the East African Region

The objective of a harmonized Digital Inclusion strategy is to facilitate the increase of accessibility, affordability, availability, reliability and usage of ICT services throughout the region as a means to foster socio-economic development and ushering East African region into the fourth industrial revolution.

The matrix below provides the detailed activities that can be used to strategize to achieve digital inclusion:

Table 1: Implementation Matrix for Digital Inclusion

No	Key Strategy Area	Program	Activity
1.	Infrastructure and Connectivity	a) Broadband Infrastructure development and management plan	- Develop a regional broadband infrastructure blueprint (map of all countries' infrastructure and required capacities) - Engage infrastructure developers (i.e. roads, pipelines, fiber etc.) to develop a common strategy for provision of broadband infrastructure. - Develop common criteria and specifications for a regional broadband infrastructure - Identify connection points and add infrastructure needed - Ensure security framework is adhered to in the development of the plan - Develop and share national plans for connecting schools, hospitals & health care, and other government offices - All countries to adopt a harmonized spectrum plan for the digital dividend - Establish redundancy at the international gateway and landing stations and optimize cost
		b) Design and implement transit hubs and clearing houses (African traffics should remain in Africa for security, quality and optimum cost)	Have direct connection between operators within the region

		c) Design and develop national IXPs	• Each country to establish at least 1 national IXP • Interconnect existing national IXPs with regional IXPs
		d) Develop regional Broadband Infrastructure resource plan	• Develop cost, funding, and management model • Implement plan
2.	Content, Devices and Applications	a) Innovation Centers	• Government invest in incubation centers • A continental information management system (enable sharing of information regionally) • Development of localized ICT applications and content • Certification and accreditation of ICT applications • Establish and enhance Intellectual Property laws • Facilitate venture capitalists
		b) Device affordability programs	• Local manufacturing and assembly of ICT equipment • Government partner with private sector to reduce cost of devices and increase adoption • Tax waivers • Government subsidies to increase affordability • Facilitate specialized financing programs

3.	Policy and regulatory Framework	a) Harmonization of existing policies and regulatory frameworks	• Review of existing policies and regulatory frameworks:
			  ✓ Licensing frameworks;
			  ✓ Spectrum management;
			  ✓ Device standardization;
			  ✓ Interconnection;
			  ✓ Cybersecurity;
			  ✓ Universal Service and Access Fund (to support content, infrastructure

			and connectivity, devices and applications); ✓ Consumer protection and competition principles;
		b) Development of additional harmonized policies	• Development of additional regulatory measures including: ✓ ICT infrastructure deployment; ✓ Infrastructure sharing; ✓ Secure critical ICT infrastructure; ✓ E-services strategies ✓ Mutual recognition of regional device type approval
4.	Capacity Building and Awareness	ICT Technical expert training and awareness program	• Develop curricula that aligns skills to industry demands and global standards • Train citizens to industry relevant skills • Implement Centers of Excellence for certification and accreditation of local apps and commercialize the apps • Introduce ICT curriculum to schools at all levels • Introduce relevant ICT curriculum to people with various disabilities

4.0 RECOMMENDATION

The aim of Universal Access and Service is the rollout of the infrastructure and making available and affordable useful ICT services in all parts of the countries and to all the sections of the population in order to prevent digital divide between rural and urban areas, between the rich and the poor populations, henceforth building a digitally inclusive society.

This document has provided recommended key areas that the East African countries can use the USAF to address the connectivity gaps in the region. With focus on these areas it would be expected to experience advances ICT deployments and uptake of ICT services. It is therefore recommended that East African member states incorporate the recommendations in the country policies and adopt them in the utilization if the USAF.

The objective of a harmonized Digital Inclusion strategy is to facilitate the increase of accessibility, affordability, availability, reliability and usage of ICT services throughout the region as a means to foster socio-economic development and ushering East African region into the fourth industrial revolution.   Additionally, the document has provided strategies recommended for Members States to follow to achieve digital inclusion.

ANNEX 1: UNIVERSAL SERVICE FUND USE AND APPROACH IN EACH EAST AFRICAN COUNTRY

Burundi:

The essential concept of universal service is to ensure that telecommunication services are accessible to as many people (and the community) as possible at an affordable price.

This concept is based on the following three principles:

- Availability: The level of service is the same for all users at their workplace or at home, at any time, without geographical discrimination.
- Affordable: For all users, the price of the service should not be a factor limiting access to the service.
- Accessibility: all telephony subscribers should enjoy non-discriminatory treatment with regard to price, service and quality of service, regardless of location, regardless of race, sex, religion, etc.

In general terms, universal service funds are financed through contributions from Internet service providers and telecommunication service providers. In the majority of cases, these contributions correspond to a tax representing a percentage of the annual operating income or the turnover generated by the operators during the operation of their networks.

Burundi adopted in July 2011 its National Policy for the Development of ICTs (PNDTIC). This policy is innovative in that the strategy focuses on rural connectivity and universal access, with the aim of providing decentralized and equitable access to services:

- to serve rural areas;
- stimulate the creation of wealth and create autonomous communities; • improve employment in rural areas;
- increase media penetration etc.

The adoption of an ICT development policy in Burundi must be accompanied by the availability of funds to implement this policy in order to reduce challenges in the ICT sector. In response, Burundi has put in place a regulatory framework governing the

universal service fund. The universal service fund was set up by Presidential Decree No. 100/186 of 16 October 2017 establishing and managing the universal ICT service fund in Burundi.

Fund Resources were as follows:

- Contributions from operators and providers of electronic communications services, amounting to 1% of their annual turnover excluding taxes;
- State grants and development partners;
- The proceeds of investments;
- Donations and gifts.

Fund Activities:

- In Burundi, resources from the Fund are primarily intended for financing: The universal service of electronic communications;
- The development of the ICT sector;
- Training and capacity building of human resources in the ICT sector;
- The Fund's modes of intervention vary according to the specificities of ICT services and accompanying actions.

As such, the financing of the Fund mainly concerns activities related to:

- The provision of public access points to electronic communications services throughout the country;
- Connection to any person, public networks and access to basic electronic communications services;
- Access to emergency services and free information;
- Free delivery of emergency electronic communications;
- The implementation of special measures for certain social groups;
- Serving rural areas not covered by operators' specifications;
- The reduction of the coverage deficit of the national territory by the means of electronic communications eligible for a subsidy;
- Supporting the development of the disadvantaged sectors of the national economy through the use of electronic communications;
- Support for research, training and standardization in the field of electronic communications;

The payment of technical, financial and accounting audit services;

- Financing any other activity that contributes to the development of electronic communications.

Activities related to the Universal Service Fund

Currently, the Telecommunications Regulatory and Control Agency (ARCT) has already collected universal service funds on a pro rata basis over the period already elapsed. This annual recovery will continue to fund the fund.

A technical committee of 9 members has been set up and meetings of the Technical Committee have been held to fix the activities to be carried out among others the fixing budget, project development and validation, etc.

Finally, the work of identifying the environments to be connected and the connectivity of isolated areas / areas are among the missions of the universal service fund to promote accessibility and accessibility. digital inclusion to the entire Burundian population.

Activities related to accessibility, connectivity and Digital Inclusion

- In the context of accessibility, "e Education" Burundi has implemented community telecentres in the provinces of RUMONGE, BUBANZA and KARUNZI. Thus, the government through the universal service fund will support existing projects by providing them with the means to expand.

These projects include:

- • Community tele-centers project, to be implemented in 18 provinces of the country

- • Implementation of school clubs in all the schools in the country.

- • The project of extension of the optical fiber network up to the level of communes and hills which is in progress which project is being piloted by ONATEL.

- In the side of 'e Government', our country has entered to digitize administrative documents including biometric passports, driver's licenses and in the future the national cards of identity. In the meantime, to obtain these documents, the beneficiaries had to go to the capital of Bujumbura.

This results in a huge cost for the non-resident citizens of the capital (travel, stay, time, cost involved in the requested act) Currently the driving license and the Travel Passport are granted in the province of NGOZI but also to be granted in other regions of the interior of the country in the Provincial Single Windows being installed especially in MUYINGA, GITEGA, MWARO and BURURI. This allows the Burundian population to stop traveling

to Bujumbura to search for their documents, which makes their life easier and gives them time to deal with other activities.

The universal service fund in Burundi is still at an embryonic stage, its implementation and its operation will enable our country to:

• significantly reduce the digital divide observed between urban and rural areas to ensure the penetration of telecommunications services in Burundi;

• Ensure connectivity and accessibility of ICT services to all segments of the population including people with special needs including children and disabled at affordable prices.

Challengers are:
  i.   Lack of electrical energy sources in rural areas to ensure the functioning of telecommunications / ICT equipment;

  ii. Lack of user access networks to provide connectivity in rural and remote areas;

  iii. Lack of financial means for organizations based in rural and isolated areas to acquire an Internet connection, particularly schools, hospitals and people living with disabilities.

Recommendations:
  i.   Elaborate harmonize guidelines dealing with universal access and digital inclusion in the region;
  ii. Elaborate harmonize framework for infrastructures development, connectivity and digital inclusion in the region;
  iii. Develop capacity building in universal access by planning training related universal access and digital inclusion.

Kenya:

  1. The Kenya Information Communications Act 2009 (KICA 2009) and the Kenya Information and Communications Regulations 2010 (KICR US&A 2010) gives the

Communications Authority of Kenya (CA) administrative responsibility to promote and ensure universal access and service with respect to the provision of communication services in Kenya. Communication services means telecommunications, broadcasting, postal/courier, e-commerce, Internet / broadband services.

2. The Act created the Universal Access and Service Fund (USF or the Fund) which is managed by the CA with the Universal Service Advisory Council (USAC) playing an advisory role.

3. The KICR 2010 further provides, through section 84J (3), for the CA to impose a Universal Access and Service (UAS) levy on identified communications service providers for purposes of funding universal access in the communications sector.

4. The purpose of the USF is exclusively for the implementation of universal access and service initiatives in order to promote social and economic development, focusing on unserved or underserved areas and disadvantaged communities that cannot be served by commercial service providers.

5. The Authority has developed a 5 Year Universal Service Fund (USF) Implementation Strategy based on the result of the ICTs Access Gaps study undertaken by the Authority in 2016. The strategy provides a framework to guide the Authority in the implementation of USF initiatives to bridge the identified gaps in the study.

6. The strategy provides the status of the ICT landscape in the country as at May 2016. It indicated that the population coverage for 2G and 3G stood at 94.4% and 78% respectively, while the land coverage for 2G and 3G was at 45% and 17% respectively for all the three (3) Operators (i.e. Safaricom (K) Limited, Airtel (K) Limited and Telkom Kenya Limited. The Fund in its first year of implementation rolled out telecommunication infrastructure in 78 sub-locations and subsequently will strive to close all the gaps in the 348 sub-locations identified by the ICT Access Gaps study.

7. The strategy has been built around the four pillars of the Authority's Strategic Plan 2013 – 2018 namely;

   a. Pillar 1: Enabling Environment
   b. Pillar 2: Institutional Capacity

c. Pillar 3: Infrastructure and Service Development
d. Pillar 4: Market Development

8. The Strategy is expected to guide the Authority in achieving the objectives of the USF in bridging digital divide, ICT capacity building, Innovation and content development.

Strategic Goals: The strategy outlines strategic goals of the Fund to be implemented in the next five years   as follows;

- ***Mobile Telephone Network Expansion and Upgrade***

Projects under this program will continue to target the coverage gaps in mobile network infrastructure and services identified in the Access Gap Study. The program is expected to continue until all sub-locations without or with low level of voice coverage are substantially covered, to the extent of reaching all population concentrations and to the extent possible to create long-term viability with one-time "smart subsidies".

- ***All communities to have access to Broadband***

The program aims at providing broadband to communities through upgrading from 2G to 3G and 4G broadband operation in the shortest possible time.

Under this program, the USF shall consider all special needs requiring broadband connections at major public institutions within designated locations and programs supported by the relevant public sector agencies. These may include any or all of the following potential areas:

  o Schools (already commenced with the school broadband project)
  o Libraries (already connected but upgrades will be considered where necessary)
  o Post offices (subject to the Key Principles of the USF as explained herein)
  o Health facilities
  o Other community service locations as requested

- ***ICT Content and Applications***

Under this program the USF shall promote or collaborate with other organizations and projects that focus on supporting development of content and applications of value to rural and underserved communities. These may include web sites, mobile apps, educational and training materials, interactive and multimedia applications for special needs users, and other targeted ICT content. The Fund will look to co-finance development projects that serve priority needs, and also those that may become self-sustaining and commercially viable.

- *Capacity Building, Education and Awareness*

The USF will support capacity and awareness building, particularly in connection with other USF projects. As appropriate, the Authority will establish ongoing relationships with qualified ICT training organisations, including private sector and university-based groups, to deliver customized public capacity building projects in communities where broadband networks and services are introduced for the first time.

The Fund has already commenced its flagship Broadband Education project for providing broadband access to 896 public secondary schools. This is focused on both capacity building and market development, and is supported by a Collaboration Agreement with the Ministry of Education, Science and technology (MoEST).

- *Special USF Projects*

These programs require the Fund to undertake Special Projects that merit financing and are also consistent with priority objectives, especially towards rural development and universal access. The Fund administration will solicit ideas, inputs, and requests from a range of stakeholders, and will prepare a tentative project plan for comment when special projects are conceptualized or planned. Details of the proposed project(s) will be open for scrutiny, including locations, services, beneficiaries, standards, and other terms and conditions. The Fund administration will set a maximum limit on the amount of Fund resources that can be assigned to Special Projects during any given year.

Rwanda

Rwanda integrated the WSIS-003 targets into its ICT for Development plan (ICT4D) which is a four 5-year rolling plan to be developed and implemented within a 20-year time frame coinciding with the VISION 2020. The ICT4D plan constitutes an integrated policy guideline well set to boost Rwanda's socio-economic transformation from the subsistence agriculture dominated economy into an information-rich and knowledge-based economy

that can compete on the global market via innovative, information-driven, ICT-enabled solutions.

Rwanda made its ICT way through four stages (NICI I-III & SRMP); and currently RURA together with other Government Institutions are implementing various projects through specific **Memorandum of Understandings (MoU)** concluded between them. Today's initiative is meant to address the above highlighted gaps by implementing projects that will fundamentally change the Rwanda's ICT ecosystem. Some of the MoUs and initiatives include:

i. The MoU with the Ministry of Education aims at connecting all the schools to either the 4G or fiber optic networks.

ii. The MoU with the Ministry of Agriculture and Husbandry aims at bringing useful content close to the needful farmers thus promoting the usage of ICTs in Agriculture hence increasing their production and efficiency

iii. The MoU with the National Council of Persons with Disabilities intends to integrate the persons with disabilities into the socio-economic development of the country.

iv. Another MoU which is being worked on between RURA and the Ministry of Health aims at using telemedicine for treating patients remotely hence avoiding their unnecessary referrals with all the logistics and intricacies associated with them.

v. Through a Public Private Partnership with Rwanda online, the Government of Rwanda is to complete the digitization of all the government to citizen and government to business services*.* Within the framework of that partnership, a number of services are already up and running with a total of 100 services expected to be online by the end of this year (2018).

As these online services are being deployed, the Universal Access and Service Fund sponsors the deployment of retail services to bring them closer to the users and ease their access.

South Sudan

Ministry of Information and Communication Technologies (MICTs) permeate every aspect of our lives; from community radios in the most rural parts of the globe to cellular phones in the hands of users in every community on earth, to computers in almost every small, medium to large organization. The advancement of ICTs has brought new opportunities for both knowledge sharing and knowledge gathering for everybody. To the extent that the global community can reach heretofore-unconnected individuals, families, and populations to better understand their needs and challenges, ICTs can provide unlimited opportunities for economic development and social engagement through new innovative thinking and tools.

However, a basic assumption is that all members of our global community benefit from ICTs and are part of the growing knowledge society. ICTs have been compared to a double-edged sword - advancing the knowledge society on one hand and deepening the urban, rural, and social divides based on pre-existing social divisions on the other. Leaving large portions of the global community both undeserved and unengaged remains the largest determinant of success for current development efforts. Specifically, without a thoughtful policy, strategy, and execution plan to ensure rural communities full engagement in the knowledge society, the places in which they work, the families for whom they care, and the communities in which they live and serve will not succeed.

Universal Service and Access is a policy goal to ensure that all people in a country have access to and are able to use ICT services. This focuses in particular on people living in rural and remote parts of the country, as well as poorer households countrywide, and persons with disabilities. A universal service policy defines a minimum set of ICT services, both for voice services and broadband Internet (DATA), which all people should be able to use. This also means that these defined telecom services must be affordable, and accessible.

The Republic of South Sudan National Communications **Act No. 24** established the National Communication regulatory Authority and at Chapter XIII Section 73 (1) to (4) gives the National Communication Authority Board (The Board) administrative responsibility to establish, promote and ensure universal service and access with respect to provision of Communication Services in South Sudan.

The NCA Act further provides, through section 81 (1) (c), for the Board to impose a Universal Service and Access (USA) levy on operators for purposes of funding universal access in the Communications sector.

USAF is designed to support and assist in the achievement of the following primary objectives:

a) Availability - the level of service should be the same for all users in their place of work or residence, at all times and without geographical discrimination;
b) Accessibility - all citizens should be treated in a non-discriminatory manner with respect to the price and quality of the service, in all places, without distinction of race, sex, religion, disability etc; and
c) Affordability - the price of the service should not be a factor that limits service access for all users.

This Universal Service and Access Fund is to be developed in line with the National Development Strategy and able to support and contribute to socio-economic development goals, in the rural areas for example:

- By aiming to provide more equitable and universal access to communications infrastructure across states and regions, the Universal Service Strategy supports national reconciliation and the rapid development of fundamental economic infrastructure;
- By using market-oriented mechanism to achieve universal service, this strategy supports competition and a vibrant private sector as well as public financial management and work on fiscal prudence;
- As universal service usually has a strong focus on rural areas, it often benefits the agriculture and livestock sectors;
- Communications can assist with job searches and employment, and infrastructure development projects, particularly in rural areas; as well as reduction of poverty and inequality;
- The Internet is one avenue for acquiring knowledge and learning, and ICT skills themselves become more and more important. Universal service not only expands broadband Internet networks, it also assists with human capital development and developing a skilled workforce; and
- The development of the financial sector is enhanced by access to mobile financial services, and communications available universally helps with financial inclusion.
- Focus the attention of communication operators towards rural population and encourage expanded levels of communication penetration in the rural and under-served areas.
- Improve broadband penetration in the country.
- Promote increased use of advanced tools and equipment and encourage broader utilization of e-applications and e-services for both rural and urban areas in South Sudan.
- Enhance advancements in research and development within the field of telecommunication and promote use of advanced technologies.
- Therefor National Communication Authority (NCA) is addressing some infrastructure issues with some Regional Optic Fiber Operators and Mobile Companies that are operating in the country.

The Ministry of Information, Communication Technology and Postal Services (MICT&PS) has already accomplished major sector reform goals such as the promulgation of the National Communication Act 2012 the liberalization of the market and the development of key regulatory rules on interconnection, frequencies, competition, licensing and numbering.

Even though commercial operators have a long-term interest in serving all parts of the country, and competition and good regulation drives network expansion, there will be areas that the commercial operators will not serve or at least it will take a long time. For

areas and communities beyond the market reach, the Act provides NCA the ability to establish various mechanisms to fulfill Universal Service obligations, including the establishment of a Universal Service and Access Fund (USAF).

Therefore, the Universal Service and Access Fund ensures that these areas and population groups will also be served. Universal Service and Access ultimately benefits economic and social cohesion, integration and a country's socio-economic growth. Universal service policies and USFs are internationally widespread practices and there are. South Sudan is building on this international experience, while still tailoring its own Universal Service and Access Fund Strategy to local circumstances and needs.

Tanzania

The Universal Communications Service Access Fund (UCSAF) was established by Universal Communications Service Access Act, 2006, which was assented by President on 05th January, 2007. Regulations were published on 27 April 2009 in GN 109/2009 and became operational in July 2009. The main objective of the Fund's establishment is to extend communication services in rural and urban underserved areas.

Therefore, we can say the Fund was established due to the following challenges:-

   a) No communication services in rural areas

   b) Operator's unwillingness to go to rural areas.

   c) High population in Rural areas than in urban Areas

   d) Limited internet penetration

   e) Limited access to broadcasting services

   f) Market liberalisation with stiff competition lower profit margins hence not windfall profits for rural coverage

The following are the objectives of the Fund among others:

   a) Identify the communications project areas that may be subsidized with funds of the Fund or that qualify to for allocation of subsidy by the Fund;

   b) Determine the criteria to identify the rural and urban under-served areas and designate universal service areas;

   c) Establish mechanism for a proper management of funds; and.

   d) Set the bidding conditions for the awarding of funds.

In order to meet its establishment objectives, The Fund has got a number of sources of income. The following are the Sources of income of the Fund:

a) Subvention from Government;

b) Service Levy from Licensed Service Providers Charged on 0.3% of the Gross Communication Income with possibility of adjusting to a maximum of 1.5%. Currently 5 Service Providers contributing for about 95% of the total levy collections and other accounting for the rest. The 5 Service Providers are the Telecommunication companies

c) Contributions from TCRA; and

d) Grants/Loans from Donors e.g. World Bank.

In terms of legal status, the Fund

a) Is a body corporate;

b) Has Board of Directors;

c) Can sue and or be sued;

d) Can acquire, hold and dispose real property; and

e) Enter into any contract or other transaction.

The Board is established under section 7 of the Act and is composed of ten members as follows:-

a) Chairman;

b) Eight non-executive members; and

c) The Manager (Chief Executive Officer).

The Board has got a number of Functions and power including the following:-

a) Performance of the functions and management of the affairs of the Fund;

b) Maintain the integrity of the Fund's financial activities;

c) Approving the following:-

a) The Programs of the Fund;

b) Operating Budget;

c) Appointment of staff other than the Manager;

d) Quarterly reports on direct disbursements of Fund projects;

In order to implement projects, the Fund follow the following process:-

a) Identify project areas;

b) Set criteria, e.g. All Villages who have mobile coverage less than 40%;

c) Advertise to enable competitive tendering process;

d) Award to winners after bids evaluation;

e) Subsidize service providers according to bidding and evaluations; and.

f) Monitoring Progress on Implementation based on Signed Contracts.

So far, the Fund has spent about 51.5 Million USD to implement a number of Rural Telecommunication Projects to extend communication services in rural and urban underserved areas in the country.

Uganda

Uganda Communications Commission (UCC) set up the Rural Communications Development Fund (RCDF) during 2001 as provided for in the Uganda Communications Act, 1997. The Act underwent revision in 2013, but the Fund was maintained as a key feature of the law.

RCDF Mission: To ensure, through targeted Interventions, that location, physical inability, gender, and cost are not barriers to access to high capacity broadband for any sector of Uganda's population.

The RCDF is currently in its third policy cycle; RCDF III which is from 2017/18 – 2021/22. (RCDF III) has its foundation in various key national policy and legal documents that provide both context and direction. In addition to these, it is informed by the first two RCDF policies in terms of experiential learning, and by UCC studies in terms of identifying supply side and demand side gaps. It's is guided by the following:

Uganda Vision 2040, The Second National Development Plan (2015/16 – 2019/20),The National ICT Policy (2014),The ICT Sector Strategy and Investment Plan (2015 – 2020) ,The National Broadband Strategy for Uganda (2016 – 2020) ,The Uganda Communications Act (2013)

RCDF Interventions are designed for Unserved and Underserved areas as defined below.

Unserved area," means any location in Uganda that is inhabited by people, or in which people carry out any kind of income generating activity, or through which people routinely transit, but where access to a defined service is non-existent by virtue of the absence of the requisite wired or wireless connectivity.

"Underserved area" means any location in Uganda that is inhabited by people, or in which people carry out any kind of income generating activity, or through which people routinely

transit, but where access to a defined service is confined to less than 25% of potential users due to cost and other barriers to utilisation.

The Purpose of RCDF:

i. Connectivity: the presence of a point, wired or wireless, where an access device (dedicated or shared) can be connected for access to online applications and services

ii. Access: the presence of a device (dedicated or shared) that provides the final technology step for users to interact with online applications and services

iii. Affordability: the ability to meet the cost of access devices (or usage fees for using such shared devices) as well as the cost of using online services and application, all within an acceptable portion of one's income.

iv. Equity: That no one should be kept out of the space for exploiting ICT opportunities due to location, physical inability, age, gender, and for a transitional period, level of literacy, technology literacy, or language.

RCDF is currently implementing the following projects to achieve its mission.
1. Digital literacy trainings in communities and for Small and Medium Enterprises.
2. Establishment of School ICT laboratories in Secondary schools and tertiary institutions
3. Teacher retooling, to equip secondary school teachers with ICT skills
4. Subsidies to operators for upgrade 2G sites to 3G sites to increase broadband penetration
5. Establishment of Community ICT public access centres with Postal centres and with public libraries
6. Support to content development for farmers
7. Digital Science software content for schools
8. ICT Support to People with Disabilities
9. Internet Connectivity to Schools
10. Establishment of mobile ICT laboratory targeting the Old, Women and the Youth
11. Establishment of E-Learning platform for secondary schools.
12. Support to Digital Terrestrial Television Broadcasting (DTTB) infrastructure.