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AFRICA DIGITAL EDUCATION WEBINAR

May 2022



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DIGITAL AFRICA INITIATIVE OVERVIEW

Laura Sigelmann, USAID

OBJECTIVE

- Summarize Digital Africa initiative
 - Goals
 - Pillar 1
 - Pillar 2
 - Pillar 3
- Digital technology in education

PROCESS TO DATE

- **Sub-IPC I (July 2021):** Submitted verbal feedback on the first draft of the concept note.
- **Small Group (August 2021):** Discussed written feedback on the concept note and USAID's proposed results framework.
- **Paper IPC (September 2021):** Concur or non-concur with the consolidated framework document.
- **Sub-IPC II (October 2021):** Discussed feedback on language on the vision, pillars and objectives for the initiative.
- **Working Groups (November and December 2021):** Interagency met to define the scope of work for Digital Africa.
- **IPC (January 2022):** Reviewed the scope of work for Digital Africa, which included the strategic approach, theory of change, framework and illustrative programming.
- **Small Group (February and March 2022):** Discussed the proposed administrative structure and name.
- **DC (April 2022):** Discussed a variety of Africa-related initiatives and formally approved the concept note for Digital Africa.
- **IPC (May 2022):** Approved the administrative structure and discussed budgeting.

GOALS OF THE INITIATIVE

- Digital Africa proposes to foster the growth of a healthy, inclusive and resilient digital ecosystem in Africa.
- The Initiative seeks to **drive economic growth** on the continent, **promote inclusion and resilience**, align with **internationally-accepted best practices on transparency and governance**, and **empower citizens** to exercise their rights.

3 PILLARS OF DIGITAL AFRICA

1. Digital Economy and Infrastructure
2. Human Capital Development
3. Digital Enabling Environment

DIGITAL ECONOMY AND INFRASTRUCTURE

- **Obj 1:** Expand access to open, interoperable, reliable, and secure Internet for African communities across sectors
- **Obj 2:** Expand access to and adoption of key enabling digital technologies, platforms, and services and scale the African technology and innovation ecosystem
- **Obj 3:** Facilitate investment, trade and partnerships in Africa's digital economy from the African diaspora, U.S. and like-minded allies

HUMAN CAPITAL DEVELOPMENT

- **Obj 4:** Facilitate inclusive access to digital skills and literacy, particularly for youth and women
- **Obj 5:** Foster inclusive participation in the digital economy through digital entrepreneurship and workforce development
- **Obj 6:** Strengthen the capacity of public sector employees to deliver digital services

DIGITAL ENABLING ENVIRONMENT

- **Obj 7:** Strengthen the capacity of authorities and the independence of regulators to develop, implement and enforce sound policies and regulations
- **Obj 8:** Support policies and regulations that promote competition, innovation, and investment
- **Obj 9:** Promote governance that strengthens and sustains an open, interoperable, reliable, and secure digital ecosystem

DIGITAL TECHNOLOGY IN EDUCATION

- Pillar 2, Human Capital Development
 - Objective 4, Facilitate inclusive access to digital skills and literacy, particularly for youth and women
- USAID has several youth digital skills programs, but are interested in exploring how ed programs can contribute
- Challenge of how to approach digital literacy
- Challenge of how to integrate digital skills into secondary education
- Critical to understand the ICT for Ed landscape in countries where Digital Africa works



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DIGITAL LANDSCAPE REVIEW KENYA, NIGERIA, AND SENEGAL

Yvette Tan

INTRODUCTION

- This review looks at the following to understand the landscape for technology in education in Kenya, Nigeria, and Senegal:
 - ICT for education policies and plans
 - Physical resources (e.g., technology infrastructure, technology devices, and software)
 - Human resources (e.g., technological and pedagogical knowledge, digital literacy*)

ICT FOR EDUCATION POLICIES, PLANS, AND PROGRAMS

All governments reviewed had some form of ICT policy.

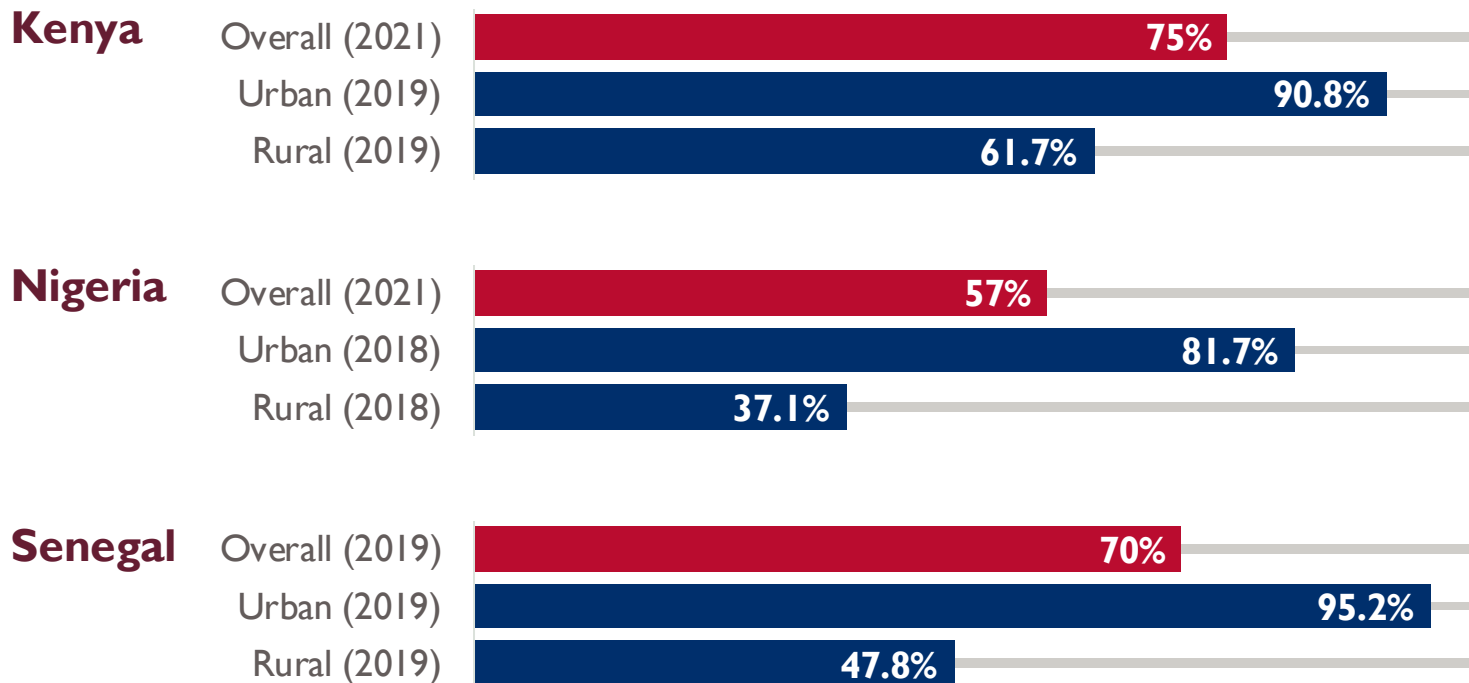
Kenya	Nigeria	Senegal
Kenya Vision 2020	National Digital Economy Policy and Strategy 2020–2030	Plan for Emerging Senegal (PES)
National ICT Policy	National Broadband Plan for 2020–2025	Digital Senegal 2025 (Sénégal Numérique 2025)
National Education Sector Strategic Plan	National Policy on ICT in Education 2019	Program for the Improvement of Quality, Equity and Transparency – Education/Training (PAQUET-EF)
Digital Literacy Program (DigiSchool)	National Implementation Guidelines for ICT in Education	
National Digital Master Plan 2022 – 2032*		

TECHNOLOGY INFRASTRUCTURE

ELECTRICITY

Countries have made great strides in expanding electrification in recent years, but rural households and poorer areas lag behind urban and better off areas.

% population with access to electricity



TECHNOLOGY INFRASTRUCTURE

ELECTRICITY

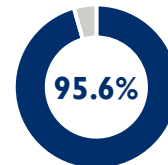
All three countries have taken steps to open up their power industry by privatizing and diversifying their power sources (e.g., solar technology and geothermal power).

Kenya

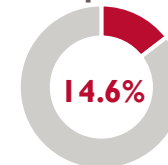
Kenyans meeting basic electricity needs with off-grid solar products



% public primary schools connected to electricity (2021)



% public primary schools using solar power (2021)



Nigeria

Main Power Sources:



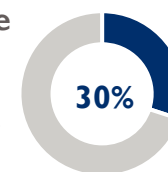
For rural areas, electrification projects focus on using **SOLAR ENERGY** as the main source of power since 2014

Senegal

Relies mostly on diesel-run power plants.



Renewable energy sources now make up about






of the electricity the country produces.

TECHNOLOGY INFRASTRUCTURE

ELECTRICITY

Reliability of electricity remains an issue in all three countries.

Kenya	Nigeria	Senegal			
<p>Electricity Reliability (Customer Average Interruption Duration Index (CAIDI)) (2020-2021)</p> <table border="1"> <tr> <td data-bbox="150 654 396 811"> <p>Kenya 4.03 hours</p> </td> <td data-bbox="363 668 428 721"> <p>vs.</p> </td> <td data-bbox="396 654 641 811"> <p>International Best Practice <2.5 hours</p> </td> </tr> </table>	<p>Kenya 4.03 hours</p>	<p>vs.</p>	<p>International Best Practice <2.5 hours</p>	<p>National median number of hours of electricity received by households (2018)</p> <p>Overall: 8 </p> <p>Urban: 8 </p> <p>Rural: 6 </p>	<p>A decade ago, it suffered from severe power outages that caused violent riots. Since then, it has expanded access and improved power reliability.</p>
<p>Kenya 4.03 hours</p>	<p>vs.</p>	<p>International Best Practice <2.5 hours</p>			

The cost of electricity in Kenya and Senegal is higher than the world average. Nigeria may be lower, but because of power outages, use of diesel generators by consumers results in additional costs.

World Average: USD 0.136 per kWh

Kenya	Nigeria	Senegal
USD 0.211 per kWh	USD 0.057 per kWh	USD 0.174 per kWh

TECHNOLOGY INFRASTRUCTURE

INTERNET NETWORKS

Majority of users access the Internet through the mobile broadband network.

While 3G and 4G network access and coverage has increased in the last few years, adoption and use of mobile Internet has not kept pace because data costs remain unaffordable. Lack of digital literacy is another barrier.

Kenya	Nigeria	Senegal
<p>% population with mobile broadband coverage, by type:</p> <p>2G (2020) 96%</p> <p>3G (2020) 94%</p> <p>4G (2020) 77%</p>	<p>% population with mobile broadband coverage, by type:</p> <p>2G (2018) 52%</p> <p>3G (2018) 44%</p> <p>4G (2018) 4%</p>	<p>% population with mobile broadband coverage, by type:</p> <p>3G (2020) 99%</p> <p>4G (2020) 75%</p>
USD 11.75 for 1.5GB data	USD 7.45 for 1.5GB data	USD 8.13 for 1.5GB data

World Median: USD 18.5

TECHNOLOGY INFRASTRUCTURE

INTERNET NETWORKS

Over the past two decades, China has become a major developer and investor in Africa's telecommunications industry. Over the past two decades, Huawei has built about 50% of Africa's 3G networks and 70% of its 4G networks (Xi, 2021).

Kenya	Nigeria	Senegal
<ul style="list-style-type: none">• National Fiber Optic Network (Huawei, ZTE)• Data center (Huawei)• Smart city (Huawei)• Surveillance project (Huawei)	<ul style="list-style-type: none">• Internet infrastructure (middleboxes by Huawei)	<ul style="list-style-type: none">• National Data Center• Internet infrastructure (middleboxes by Huawei)



EQUITABLE ACCESS TO TECHNOLOGY DEVICE AND INFRASTRUCTURE

- Clear digital divides exist in gender, geography, education levels, income levels, and disability status.
- Gender: The gender gap in mobile phone ownership is smaller than the gender gap in mobile Internet use.



GENDER	Kenya (2020)	Nigeria (2020)	Senegal (2019)
Mobile device ownership	<p>86% (Women), 92% (Men)</p>	<p>86% (Women), 89% (Men)</p>	<p>71% (Women), 73% (Men)</p>
Mobile internet use	<p>32% (Women), 56% (Men)</p>	<p>40% (Women), 56% (Men)</p>	<p>37% (Women), 46% (Men)</p>

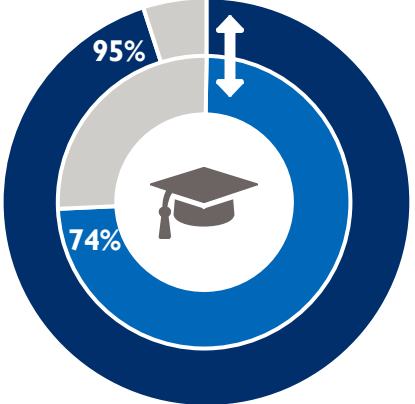
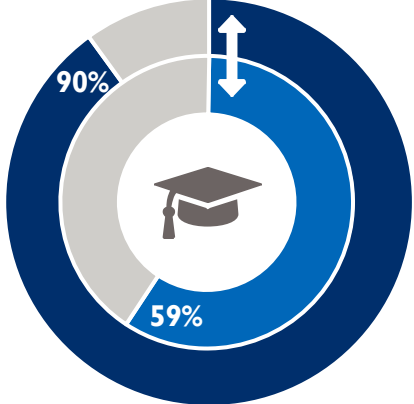
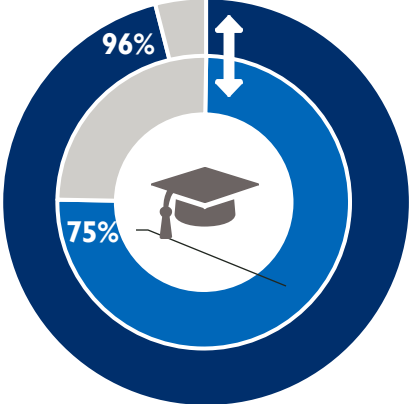
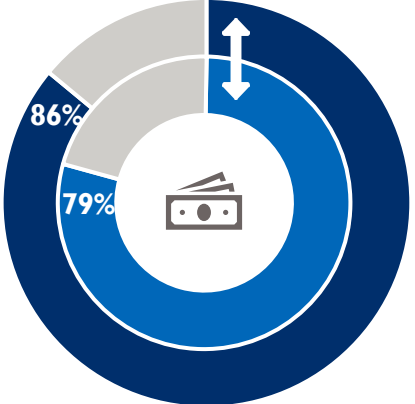
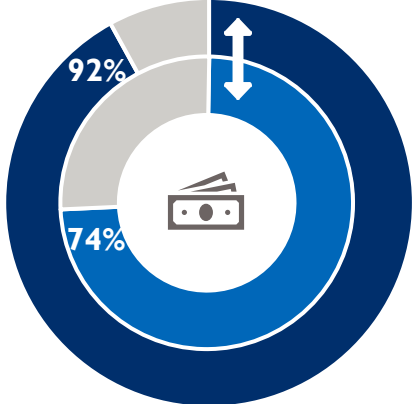
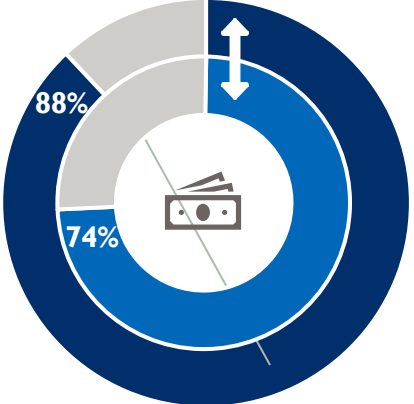
EQUITABLE ACCESS TO TECHNOLOGY DEVICE AND INFRASTRUCTURE

- Biggest difference is seen in computer ownership.

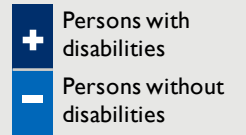
GEOGRAPHY	Kenya	Nigeria	Senegal
Mobile device ownership (% households)	No Data Available	2018 Urban 95% Rural 82%	2019 Urban 99.2% Rural 94.8%
Smartphone ownership	Rural-urban gap (2020) 15%	No Data Available	No Data Available
Mobile Internet use	Rural-urban gap (2020) 24%	Rural-urban gap (2020) 39%	Rural-urban gap (2019)  49.6%  52.6%
Computer ownership (% households)	2019 Urban 18% Rural 3%	2018 Urban 10.8% Rural 2.5%	2019 Urban 22.9% Rural 4.0%

EQUITABLE ACCESS TO TECHNOLOGY DEVICE AND INFRASTRUCTURE

 More education/
higher income
 Less education/
lower income

EDUCATION /INCOME	Kenya (2018)	Nigeria (2018)	Senegal (2018)
Mobile device ownership by education	 <p>95% 74%</p>	 <p>90% 59%</p>	 <p>96% 75%</p>
Mobile device ownership by income levels	 <p>86% 79%</p>	 <p>92% 74%</p>	 <p>88% 74%</p>

EQUITABLE ACCESS TO TECHNOLOGY DEVICE AND INFRASTRUCTURE



DISABILITY	Kenya (2019)	Nigeria (2019)	Senegal
Mobile device ownership	<p>93% 82%</p>	<p>87% 49%</p>	No Data Available
Smartphone ownership	<p>30% 26%</p>	<p>9% 45%</p>	No Data Available

TECHNOLOGY DEVICE & SOFTWARE ACCESS IN LEARNING INSTITUTIONS

There are existing government, non-government, and private company initiatives on education technology.

All three countries have several innovative indigenous edtech companies.

	Kenya	Nigeria	Senegal
Examples of EdTech Initiatives	USAID and DFID's Tusome National Tablets Program DigiTruck Project	EdoBest Basic Digital Education Initiative	Planete USAID Lecture Pour Tous DigiSchool
Examples of EdTech Companies	Eneza e-Limu	SchoolGate National Open University	Galactis.Education Miracle software

TECHNOLOGICAL AND PEDAGOGICAL KNOWLEDGE OF TEACHERS

- Key takeaways about teacher training and knowledge:
 - Most teachers lack the skills to use and integrate ICT into their teaching.
 - Teacher training and development is not prioritized, especially in rural areas and marginalized communities.
 - There is a lack of in-service training on technology integration.
 - Ongoing support and coaching are essential elements of distance continuous professional development.

RECOMMENDATIONS

- Work with the relevant ministries to understand how to build on and support these government initiatives and investments.
- Understand where decision making on ICT for education policy, support, and implementation lies to better design and implement demand-driven projects and programs.

RECOMMENDATIONS

- Partner with key stakeholders (e.g., government ministries, power and telecommunications companies) and study financing, maintenance, and sustainability of alternative power sources and network coverage for remote areas to develop sustainable strategies that can increase demand and know-how among users.
- Find ways to work with or build on existing technology network infrastructure.

RECOMMENDATIONS

- Evaluate existing programs for effectiveness and document lessons learned.
- Build on or extend programs that have proven reach and efficacy to serve the most marginalized students.
- Engage with indigenous private edtech companies to build on and support in-country expertise.

RECOMMENDATIONS

- Support effective local private edtech companies to make their products and services more accessible and affordable to a larger number of schools, teachers, and students including the most marginalized and underserved.
- Work with key stakeholders to study, define, and measure digital literacy skills of target population.

RECOMMENDATIONS

- Invest in pre-service and ongoing in-service trainings and materials that strengthen digital literacy skills (including digital safety) of school administrators and educators.
- Incentivize teacher adoption of ICT in their teaching.
- Develop materials that can strengthen digital literacy skills among education support staff, parents, caregivers, and students.



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ICT4E Activity Stocktaking

Preliminary data for the period of 2018-2021

Mariam Britel-Swift, USAID



Photo: Raz Jha/pixar for USAID's Youth Development Communications

PURPOSE

To understand the breadth and depth of ICT4E related programming across Missions across the basic education and higher education program areas. This information will help to inform the Education Digital Strategy Action Plan.

DEFINITIONS

- Information and Communication Technologies (ICT) includes a diverse set of technological tools and resources used to transmit, store, create, share, and/or exchange information.
- Information and Communications Technologies for Education (ICT4E) encompasses the same set of tools and applications identified for ICT, but with the specific application for education.

MISSIONS THAT RESPONDED (12)

Africa

Mozambique	Tanzania
Senegal	Southern Africa
Kenya and East Africa	Rwanda
Nigeria	Liberia
South Sudan	Ghana
Malawi	Niger

MAIN FINDINGS

- Most ICT4E programming integrated within broader activities.
- 10 out of 12 AFR Missions reported ICT4E activities used to enhance student knowledge and skills.
- 9 out of 12 Missions state that their Missions fund activities that use ICT4E with a focus on teacher development, training, and ongoing support.

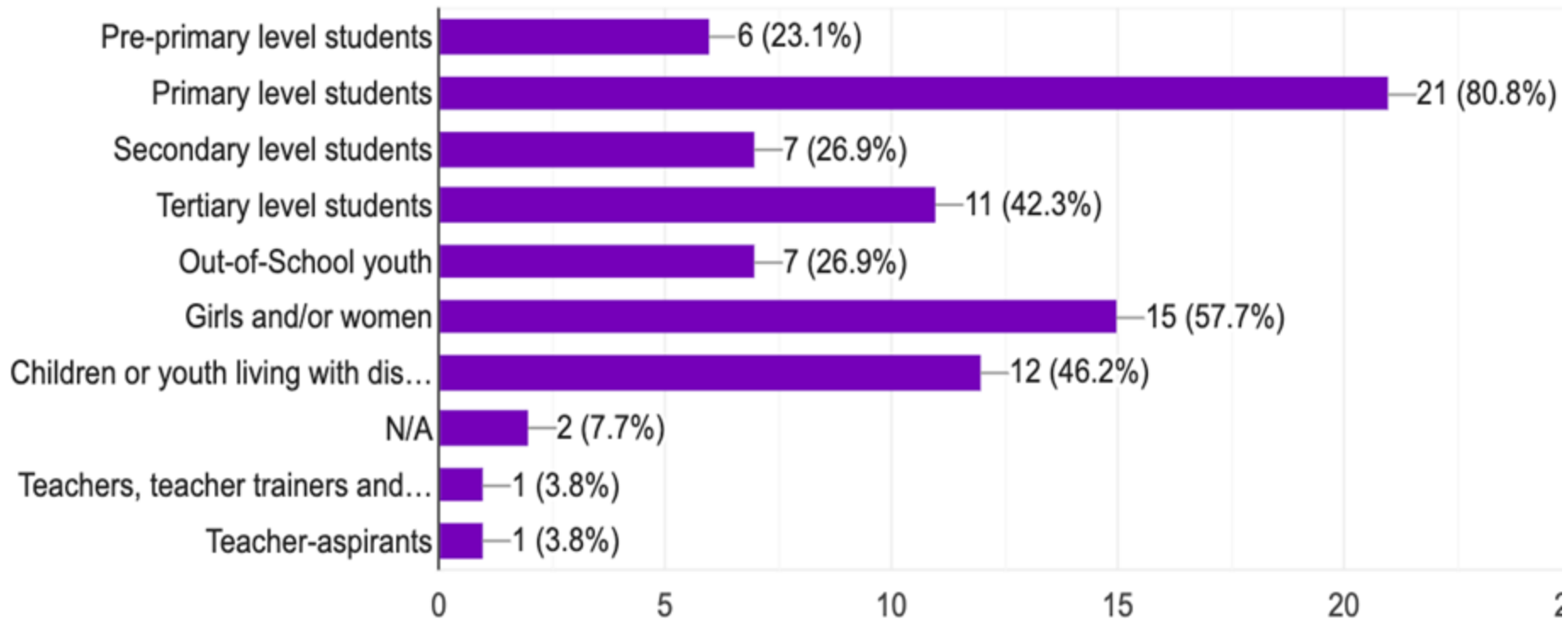


EXAMPLES OF ACTIVITIES

- Let's Read Activity; Improving Learning Outcomes; Peace Corps Libraries (Mozambique)
- SMS messaging system, distance learning training modules in a smartphone-friendly format, radio programs' EGRA data collection system (tangerine) (Senegal)
- Tusome, YALI RLC East Africa, Generation Kenya (Kenya and East Africa)
- Essential Emergency Education Services - Education on air (South Sudan).
- Providing e-content materials for children with vision challenges via Orbit readers and audio content (Tanzania)
- Technology Learning Assisted activity (TELA) (Nigeria).

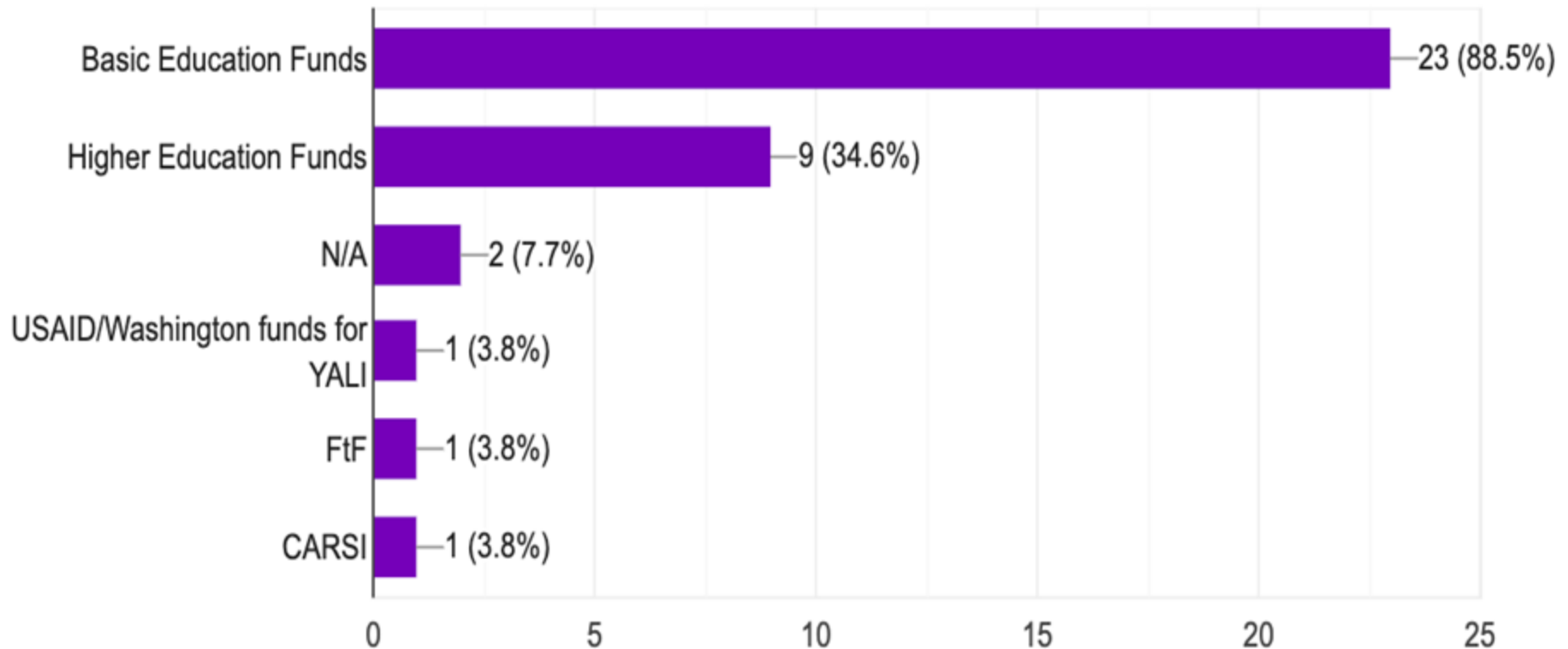
BENEFICIARIES

- The largest number of activities is for primary level students



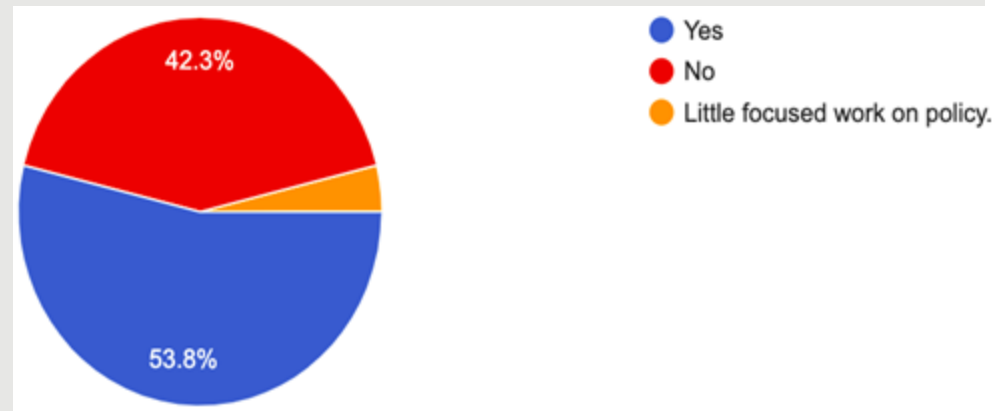
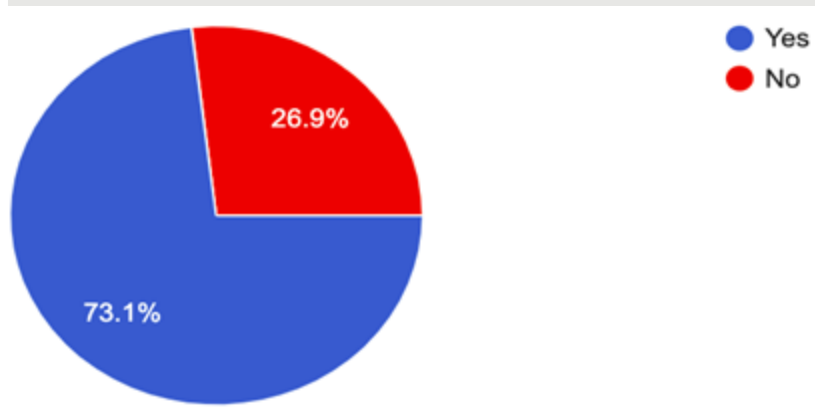
FUNDING

- Most ICT4E programming comes from BE funding sources:



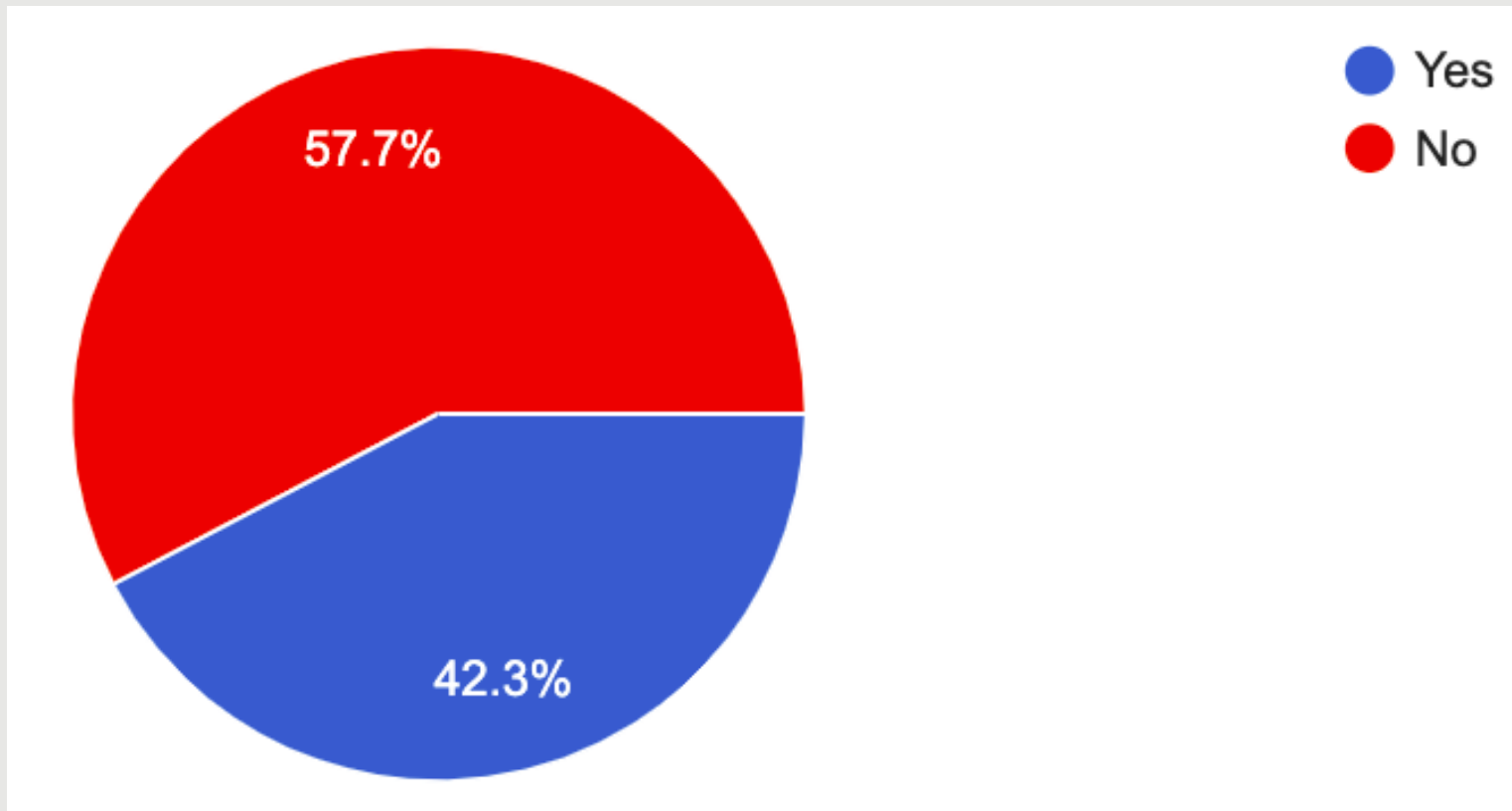
ICT4E POLICY ENVIRONMENT

- The majority of Missions fund ICT4E programming to support data-driven decision making
- Half of the Missions offer a supportive policy environment for ICT4E programming



MONITORING AND EVALUATION

- Limited systematic monitoring and evaluation of ICT4E activities



QUESTIONS?



IDENTIFYING NEEDED SUPPORT

What support do you need to incorporate digital learning into your education and youth programming?



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Thank you for attending the Africa Digital Education Webinar

For additional information please contact:

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ACKNOWLEDGEMENTS

This document was produced for review by the United States Agency for International Development (USAID). It was prepared by Mariam Britel-Swift, Laura Sigelmann and Yvette Tan with contributions by Amy Mulcahy-Dunn, Gloria Wazni and Crystal Cason from EnCompass LLC for the Data and Evidence for Education Programs (DEEP) contract (Contract No. GS-10F-0245M/7200AA18M00018). The views expressed in this publication do not necessarily reflect the views of USAID or the United States Government.