KEY HIGHLIGHTS

Ethiopia Country Study June 2017

1. About Ethiopia

Ethiopia, officially known as the Federal Democratic Republic of Ethiopia, is located in the Horn of Africa and covers about 1,104,300 km^2. Ethiopia is landlocked between the Sudan, South Sudan, Eritrea, Djibouti, Somalia and Kenya.

Amharic is the official language of Ethiopia, although other languages are official amongst the various ethnicities in their respective regions. Languages spoken in the country include Oromo (official working language in the State of Oromiya), Somali (official working language of the State of Sumale), Tigrigna (official working language of the State of Tigray), Sidamo, Wolaytta, Gurage, Afar (official working language of the State of Afar), Hadiyya, Gamo, Gedeo, Opuuo, Kafa, English (major foreign language taught in schools) and Arabic growth has averaged over 5 percent for the last seven years.

9.1450° N, 40.4897° E

104,470,117

$174.7B (PPP)

Where is Ethiopia in terms of Information, Communication Technology (ICT), Education and Science Technology and Innovation (STI): the pillars of the African Leadership in ICT and Knowledge Society Development (ALICT) course

2. Information Communication Technology

The ICT sector in Ethiopia is shaped by sector regulation that was approved in 1996 to create a single national operator. The reform of the communications sector began by separating the regulatory and the operational functions through the establishment of a regulatory entity, the Ethiopian Telecommunications Agency (ETA), and a commercial entity, the Ethiopian Telecommunications Corporation (ETC) .

In 2003, the government established the Ethiopian ICT Development Agency (EICTDA) with a mandate to support information technology (IT) applications and capacity building within the government. The EICTDA was organized around five areas, namely ICT for government, legal and regulatory frameworks including standards, human resources development, ICT applications in various sector, private sector development and promotion of community access. The EICTDA was also charged with the development of a national ICT policy.

ICT Policy Frameworks

The National ICT Policy and Strategy that governs the Ethiopian ICT sector was drafted in 2005 and approved in 2009, and there is an updated 2016 draft. The 2009 policy's key vision is to improve the social and economic wellbeing of all Ethiopians by optimizing opportunities created by ICT, for ensuring the establishment of a sustainable democratic system and rapid socio -economic Through the 2016 national ICT policy draft, the country has leveraged ICT to play a stronger role in Ethiopia's goal to become a middle-income economy, and to provide a regulatory framework for the implementation of ICT across various ministries while focusing on providing ICT access and broadband to all citizens.

In line with its ambition to become a middle-income country by 2025, Ethiopia views its ICT policy as integral to the country's larger development goals and objectives.

The Ethiopian ICT Strategy proposes that the country should:

- Advances its ICT research and development by building a state-of-the-art broadband network that supports academic and research networking,
- Improve the incentives for academic institutions and the private sector to promote ICT research and development,
- Address cross-cutting challenges such as coordination, collaboration, empowerment of women and financing.

ICT Infrastructure

In terms of ICT infrastructure, Ethio Telecom provides telecommunication services to Ethiopia. There is an open-wire, microwave radio relay, radio communication in the HF, VHF and UHF frequencies. Two domestic satellites provide the national trunk service. There is 12,000 km optic fibre cable infrastructure starting from central Ethiopia to all directions of the country and connected all cities with a capacity to transmit 40 Gbps along with the national backbone.

In 2015, according to Ethio Telecom, there were:

836,543 fixed telephone lines in use,

43 million mobile phone users

13 million internet users with 87% wireless coverage

ICT4D Initiatives

Ethiopia is using an ICT4D policy developed in 2006.Its objectives are to:

- Facilitate public administration and service delivery, including the introduction of electronic government (e-government) and governance;
- Promote ICT development at all levels of the educational system;
- Use ICT for the development of sectors such as agriculture, health, industry and trade;
- Develop telecommunications and physical infrastructure;
- Facilitate private sector development including electronic commerce (e-commerce), electronic trade (e-trade) and foreign direct investment;
- Promote research and development in ICT; and establish enabling legal and regulatory frameworks for smooth development of the ICT sector

The country has an ***eGovernment*** network connecting more than 600 local, regional and federal government offices across the country.

Challenges in ICT Development

According to the draft 2016 National ICT Policy, the ICT sector in Ethiopia still faces substantial challenges, that are addressed in the draft policy framework, including amongst others:

- *Differences in the extent of usage of broadband services and availability of the latest broadband technologies;*
- *Cost of broadband connectivity impeding its widespread diffusion;*
- *Incomplete connectivity of all institutions in government, education and health networks;*
- *Need for ICT legislation and regulation to adjust to the rapidly evolving ICT sector;*
- *Insufficient locally relevant ICT services and applications for economic and social development and poverty reduction;*
- *Need for ICT to provide a valuable contribution to monitoring, mitigating and adapting to climate change and for ICT to play an enhanced role in emergency communications and disaster relief;*
- *Lack of digital literacy and awareness to enable all citizens to access and contribute to sharing of information, ideas and knowledge to create an inclusive information society; and*
- *Constraints to fully unleash the potential of small innovative entrepreneurs for transforming the economy.*

2. Education

The Ethiopian Ministry of Education (MoE) coordinates general, higher, and technical and vocational education and training (TVET) education in the country. Pre-primary education is delivered through three modalities in Ethiopia.

Kindergarten is predominantly operated by non-governmental organisations (NGOs), communities, private institutions, and faith-based organisations. Non-formal pre-school service is being delivered mainly through the child-to-child initiatives. The third modality is the most widespread response of local governments and that has been the setting up of 'O' class.

ICT in Education

The government introduced the ICTs in Education Implementation Strategy and Action Plan in 2010 as one of the pillars of the ICT4D policy to address the rural-urban divide in Ethiopia in terms of access to computer in education.

What has the strategy helped the education sector to achieve so far?

ESDP IV planned to equip all secondary schools with the equipment necessary to access satellite television education and e-learning programmes in computer laboratories.

- By 2015, 69% of secondary schools had benefited from the educational satellite television broadcast programme.
- Newly developed educational television programmes were digitised and dispatched on DVDs.
- 28% of secondary schools have access to an internet service and, of these, 6% have high capacity content servers.
- English language interactive radio instruction programmes have been developed by the Centre for Educational Information and Communication Technology (CEICT) of the MoE for use in primary schools.
- These programmes and educational audio programmes in other subjects were aired in primary schools.

Professional Development

In-service training for all teachers will be provided through a targeted programme of Continuous Professional Development (CPD). The approach to CPD is conceptualized as a school level, peer-led professional excellence strategy, consisting of reflective activity designed to improve an individual's values, knowledge and skills. It is designed to support teachers' individual needs and to improve professional practice and will be delivered through external expertise, school networks and clusters, and school-based training.

ICT will be fully integrated in teachers' training courses and supported with practice so that teachers are equipped to use technology and to teach and assist their students with technology. The Teacher Education Programme emphasizes enhancing the capacity of teachers in the use of ICTs in teaching and learning processes of various basic subjects especially in secondary schools.

Challenges facing the education sector

1. Accessing quality education is a significant problem for the most disadvantaged children in Ethiopia.
2. A lack of electricity in schools limits access to ICT initiatives. Poorer children and those in rural areas enrol later and make slower progress in learning.
3. Late and delayed enrolment in school are associated with slow grade progression, drop-out and poor achievement.
4. Absenteeism and drop-out among boys is often higher than for girls and are largely due to their involvement in unpaid domestic/agriculture work, whereas for girls they are mainly the result of a need to look after younger siblings and the direct cost of schooling (such as school uniforms, stationery, and parental contributions towards school improvement activities).
5. Low levels of teacher qualification and Inadequate capacity for professional development within the education system.
6. Lack of transparency within its processes, and the need for a participatory approach of the leadership and management of educational institutions.
7. At 8%, African higher education enrolment is significantly lower than the global average of 32%, and Ethiopia trails even further behind, with fewer than 6% of university-age adults attending university. Ethiopia desperately needs universities to drive development, and higher education infrastructure has burgeoned in the last two decades.

3. Science, Technology, and Innovation (STI)

Four years before the United Nation in the Science and Technology conference 1979 introduced most of the developing countries to science and technology policy, Ethiopia established the Ethiopia Science and Technology Commission in 1975 by proclamation No.62/1975. It was set up with the mission to initiate, organize, direct and promote scientific and technology research and development endeavors.

Research and Innovation

Ethiopia's innovation performance stifles its overall competitiveness. According to the World Economic Forum's Global Competitiveness Index (GCI), Ethiopia ranks 109th out of 138 countries with a score of 3.7 out of 7.0 in the 2015-16 report. While the overall score of innovation indicators increased 0.5 points in the past six years (3.2 in 2015-16 from 2.7 in 2009-10)

Challenges facing the STI sector

1. In 2014 there were only two women recipients of the innovators award given out by the gender bureau for innovations related to women's excess workload.
2. Sex-disaggregated data on the trends of publication and patents for innovation in Ethiopia remains limited.
3. Very few Ethiopian women publish or patent innovations, largely due to prevailing beliefs that science is not a suitable field for women and to the time constraints of domestic responsibilities.
4. The shortage of qualified personnel in the national system of innovation in general and the various STI actors in particular.
5. The lack of knowledge, skills and attitude of personnel at all levels of the system has constrained people from discharging their responsibilities in science and technology effectively.
6. The shortage of technical and research personnel, coupled with shortage of financial resources, call for aggressive importation of foreign technology as an catch-up strategy, further hampering development in the sector.
7. The limited understanding of the benefits of STI by the manufacturing sector, which lacks significant growth, have hindered its active involvement in the system.
8. The over reliance on state funding and the poor engagement of the private sector have also greatly challenged STI activities.
9. The absence of different nationally developed guidelines and research evaluation models for the allocation of R&D funding is a barrier that adds up to inefficiencies and resource wastages.
10. STI infrastructure is crucial for searching for, selecting, learning, adapting, and disseminating technology. Outdated laboratory facilities, insufficient equipment and the poor telecommunication networks in Ethiopia contribute to the poor performance.
11. The lack of data warehouses, and poorly designed websites with little or no information about the stakeholders makes it hard to grasp developments in the sector.
12. A poor institutional culture to monitor and evaluate programmes and policy implementations has repercussions on the overall effectiveness of the accomplishment of the mission of the STI policy.

Conclusion…

The development of KS is still in the nascent stages.

- Ethiopia is a low-income country with one of the lowest literacy rates in the world. Current poor performance in education, particularly the low level of enrolment in higher education institutions, impedes its readiness to transition into a KS.

- There is a lack of updated policies, particularly in the STI sector and in ICT for development.

- 40% import tariffs on ICT equipment make it too costly for most citizens. The incumbent public telecommunications operator has a monopoly over all telecommunications services. Although the number of mobile phone subscribers is growing, uptake in Ethiopia is among the lowest in Africa. This is due to the limited telecommunications infrastructure, low levels of computerization outside the capital, and lack of human resources. The low level of internet access is limiting the usefulness of ICT in creating a KS.

KEY Actors/Players

⇒ Ministry of Communication and ICT (MCIT)
⇒ Ethio Telecom
⇒ Ministry of Education
⇒ Curriculum Development Institute
⇒ Centre for Educational Information and Communication Technology (CEICT)
⇒ Camara Education Ethiopia
⇒ African Virtual University (AVU)
⇒ EthERNet
⇒ Inspur Group
⇒ ICT Centre of Excellence (ICTCoE)
⇒ Ministry of Science and Technology (MoST)
⇒ Ethiopian Academy of Sciences
⇒ Science and Technology Information Centre (STIC)
⇒ Ethiopian Conformity Assessment Enterprise (ECAE)
⇒ Ethiopian National Accreditation Office (ENAO)
⇒ Ethiopian Standards Agency (ESA)
⇒ Ethiopian Intellectual Property Office (EIPO)
⇒ National Metrology Institute (NMI)
⇒ Ethiopian Radiation Protection Agency (ERPA)
⇒ Ethiopian Space Science Society (ESSS)
⇒ Entoto Observatory and Research Center (EORC)

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12,000 km optic fibre cable infrastructure starting from central Ethiopia to all directions of the country and connected all cities with a capacity to transmit 40 Gbps along with the national backbone.

Education: Educating the girl child The country has made strides in educating women between the ages of 15 and 19, achieving a 70% literacy rate by 2014.

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Taxes on ICT hardware 40% import tariffs on ICT equipment make it too costly for most citizens. The incumbent public telecommunications operator has a monopoly over all telecommunications services.

Education: Absenteeism and drop-out among boys is often higher than for girls. Largely due to their involvement in unpaid domestic/agriculture work.

INTERESTING FACTS ABOUT KS DEVELOPMENT IN ETHIOPIA

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