

Malawi

Regional Communications Infrastructure Program (RCIP)



Source: Provided by Audrey Mwala, Director – Project Finance and Risk Analysis, Public Private Partnership Commission Malawi

A government-led initiative that uses public institutions to help overcome the challenges of providing information and communications technology in remote areas. The initiative in Malawi targeted inclusion of under-served areas in the benefits from a larger infrastructure program connecting several Eastern and Southern African countries.

The Regional Communications Infrastructure Program (RCIP) was developed to accelerate the roll-out of information and communications technology (ICT)¹ and to ensure that the infrastructure under construction along the Eastern and Southern Africa coast at that time would also benefit communities in inland areas and landlocked countries.

The World Bank supported this program for eight African countries, including Malawi². The implementation of the undersea fibre optic cables and landing stations as part of this program was led by the private sector, with funding from the World Bank, International Finance Corporation (IFC) and other partners. Additionally, terrestrial networks were developed to improve last mile delivery.

The Regional Communications Infrastructure Program Malawi (RCIPMW) aims to improve the quality, availability and affordability of broadband internet connection through a public-private partnership (PPP) model, as implemented by the Malawi Public Private Partnership Commission. It also includes support for the development of the sector, enabling environment, and provision of connectivity to targeted public institutions within the country.

¹ Information and Communications Technology (ICT) refers to technologies that provide access to information through telecommunications, such as internet, wireless networks, cell phones and other communication mediums.

² The program is being rolled out in several phases involving the following countries: Phase 1 – Kenya, Burundi and Madagascar, Phase 2 – Rwanda, Phase 3 – Malawi, Mozambique and Tanzania, Phase 4 – Comoros, Phase 5 – Uganda (The World Bank, 2013).

The RCIPMW has three main components:

- (1) *Enabling environment* (USD 1.9 million): capacity building and training
- (2) *Connectivity* (USD 14.5 million): finance for digital infrastructure investments, including the provision of an underground fibre-optic link from Malawi's capital Lilongwe to Tanzania and Zambia under a PPP arrangement, and the supply of broadband connectivity to institutions and rural areas. The licence for regional fibre links and the virtual landing point was awarded to service provider, SimbaNET, which completed the western regional fibre link through Zambia in August 2015 and the north-eastern fibre link through Tanzania in December 2015.
- (3) *Project management* (USD 3.5 million): including project coordination, procurement, financial management, and monitoring and evaluation.

This case study relates primarily to the 'last mile connectivity' component of the RCIPMW (listed in point 2, above). This component provides internet access and information technology equipment, such as computers and printers, to public institutions, including District Information Offices, teacher training colleges and secondary schools. It supports students and villagers who do not have access to the internet due to lack of education, the absence of private sector internet service provider(s) and affordability.

Relevant to this case study is the inter-agency collaboration needed to reach students and villagers (i.e. farmers), and to provide them with internet access. Studies show that providing ICT can increase economic and social inclusion. In Malawi, ICT access is viewed as an important enabler for inclusion and helps to address growing inequalities in professional and personal development opportunities. In conjunction with its investment in broadband access and outreach programs, the government is also making improvements to its regulatory framework by formulating policies that attract more private sector investors to the ICT sector.

This project does not seek to provide direct access to ICT for individuals across the country. Instead, it uses public institutions to reach people, including students and farmers. It demonstrates efforts to engage with communities that are not only impacted by high levels of poverty and illiteracy, but are also vulnerable due to extreme climate and market dynamics.

Project Overview

Key words	Rural area, poverty, internet, public institutions, ICT access, education
Sector	Information and communications technology (ICT)
Background	Only one in ten people in Malawi have access to information and communications technology (as of 2016). This is due to the high cost and complexity of developing the infrastructure and end-user service offering. However, the government plans to improve access to, and the affordability of, broadband connections. It is initiating projects to reach out to the most disadvantaged groups in society.
Size	<p>USD 19.9 million from the World Bank for the RCIPMW component:</p> <ul style="list-style-type: none"> • Enabling Environment – USD 1.9 million • Connectivity – USD 14.5 million • Project Management – USD 3.5 million
Stage	<p>Project duration: 2009 – 2016</p> <p>Number of institutions providing hub ICT services:</p> <p>Phase I: 16 institutions</p> <p>Phase II: 30 institutions</p> <p>Phase III: 145 institutions</p>
Why of interest	<ul style="list-style-type: none"> • ICT services hubs have been established to provide internet access to students and villagers • Training provided for teachers (at schools and colleges) and government officials (at District Information Offices) on how to use ICT equipment (i.e. internet, computer and printer), which will be passed on to students and community members • Part of the long-term objective to increase internet access, which will improve economic and social inclusion
Project objectives	<ul style="list-style-type: none"> • Reduce the high cost of internet access and operation • Enable government employees to improve service provision for residents • Build capability and capacity at government offices and educational institutions so knowledge can be passed on to other community members
Project Lifecycle Assessment	<p>Project preparation – Identified institutions that had the potential to reach communities which did not have access to the internet.</p> <p>Project procurement – No relevant practices identified.</p> <p>Construction – Provision of training to government workers and students.</p> <p>Project monitoring and evaluation – Understanding the impact that increased access to information and computer and internet usage has on social inclusion.</p>

Project Description

Malawi is one of the least developed countries in the world. It had a per capita gross national income (GNI) of just USD 320 in 2016 and a total population of 18 million (also in 2016)³. The agricultural sector accounts for a third of the gross domestic product (GDP) and is the main source of income for two thirds of the population. Based on the international poverty line of USD 1.90 per person per day⁴, the poverty rate in Malawi was 70% at the end of 2016⁵.

In Malawi, ICT infrastructure services are still at an early stage of development. Most people access ICT technologies through their personal mobile phones. 45% of the population have mobile phones. Only 4% of households have access to a computer.

At a national level, very few households own personal computers – only 3% own a laptop, while 2% have a desktop computer. Overall internet access remains low, despite a jump from 0.13% in 2000 to 10% in 2016⁶. A national survey revealed the main reasons for this are high costs for home usage and lack of knowledge about how to use the internet⁷.

Access to ICT is an important factor in achieving the country's national economic development goals. It could help to increase living standards in Malawi because it gives residents of low- and middle-income households a way to tackle educational, social and economic challenges. This is evident in remote areas where, beyond its social benefits, ICT access also has economic value⁸.

Areas where ICT has been applied include:

- (1) agriculture, where access to phones and the internet can help disseminate information on planting and crop management, daily commodity prices, etc.;
- (2) government transparency, where streamlining workflows and creating information repositories help to increase accountability, transparency and efficiency; and
- (3) education, where schools are provided with ICT tools to equip students with the necessary skills to participate in the information society and knowledge economy.

³ Economic development document for the Republic of Malawi, 2017, (International Monetary Fund, 2017)

⁴ The poverty line was set at USD 1.90 at 2011 international prices in October 2015 by the World Bank.

⁵ Poverty rate is measured by the percentage of the population living below the international poverty line of USD 1.90 per person per day.

⁶ Percentage of population using the internet in Malawi from 2000 to 2016, (Statista, 2016)

⁷ Survey on access and usage of ICT services in Malawi, (Malawi Communication Regulatory Authority & National Statistical Office, 2015)

⁸ ICT's impact on a country's economy and growth is increasingly clear. World Bank research shows that a 10% increase in mobile phone subscribers leads to a 0.8% increase in economic growth. Similarly, a 10% increase in high-speed internet connections leads to a 1.3% increase in economic growth. ICT in the developing world, (STOA, 2015).

Furthermore, ICT has a significant impact on a country's economic growth. For example, in a study conducted on the impact of the internet in sub-Saharan Africa, it was shown that internet connectivity may help to improve the agricultural sector's supply chain management and operational inefficiencies, as well as promote more transparent pricing and provide access to climate data. That, in turn, would substantially reduce costs and increase farmers' incomes. Through the internet, they can obtain precise weather information and order products online⁹. Farmers with access to the internet are in a better position to decide where, and for how much, they can buy or sell certain products, enabling them to compete on equal terms and face less discrimination due to their location.

Access to the internet also has a positive impact on education by enabling people to learn new skills online. The web can help provide cost-effective access to educational materials, thereby increasing literacy and engagement in low-income and remote areas.

The impact on social inclusion is also important. The development of social networks, which encourage integration in the community and the economy, help people from disadvantaged groups to be better organised and better connected to each other. In addition to fostering freedom of expression, social media has the potential to boost collaboration and social inclusion at all levels of society.

Although there is an upward trend in computer usage, the number of people with access to, and using, the internet remains low. The high cost of the technology relative to personal income is a major challenge in increasing its appeal¹⁰. In response to this, the Malawi Communications Regulatory Authority (MACRA) initiated the Regional Communications Infrastructure Program Malawi (RCIPMW) project. It aims to increase the accessibility and affordability of internet connection by providing ICT infrastructure and equipment donations to educational institutions and government offices.

RCIPMW, which is being delivered in three phases, is part of a multi-country ICT assistance program, with the primary objective of supporting Malawi's efforts to improve the quality, availability and affordability of broadband internet within its territory for both public and private users. The project also aims to provide internet connectivity to public institutions, including teacher training colleges, District Information Offices and secondary schools.

⁹ The impact of internet connectivity on economic development in Sub-Saharan Africa, (Guerriero, 2015)

¹⁰ Retail price of internet access has decreased from USD 120 at baseline (December 2008) to USD 5.8/MB (June 2016) per month per customer. Furthermore, the monthly retail price of broadband internet access (1 Mbps) was dramatically cut by more than 50%, USD 140 (2008) to USD 30 (June 2016). However, this price is still considered to be very high. Implementation Completion and Results Report, (The World Bank, 2018a)

Phases one and two of RCIPMW were completed in 2014, while phase three is still ongoing. As of September 2018, 201 public institutions are benefitting from the project¹¹. As part of this case study, inclusivity aspects of 145 public institutions that received broadband internet access in 2013 were considered. Through the public institutions, internet access should be made available to people living in remote areas who currently do not have access and are unable to afford it.

This project illustrates the application of inclusivity in several Action Areas, the most relevant being **Governance and Capacity Building**, as government institutions are used to reach out to households without ICT access. Malawi has also made efforts at the policy level to address some barriers, which is covered in the Action Area of **Policy Regulation and Standards**.

Key Practices Identified and Applied



GOVERNANCE AND CAPACITY BUILDING

Statement of the issue in relation to inclusion and brief introduction

The gap between the richest and poorest members of society has continued to rise sharply and poverty is extreme and endemic¹². Malawi is also struggling to address gender inequality and ranks towards the bottom of the Global Gender Gap rankings¹³. In 2010, 50% of the population was classified as poor while 25% lived in extreme poverty, which is defined as the ‘inability to satisfy food needs’¹⁴.

Given this wide social gap, equal opportunity is not granted to everyone to improve living standards and access economic prospects. This increases economic and social inequality between the high-income groups and the low-income groups. The low-income group has also been found to be very vulnerable to external events (i.e. extreme weather impacting farming yield, inflation, etc.). Rainfall and loss of off-farm employment are dominant factors

¹¹ Regional Communications Infrastructure Program Phase 3: Implementation Status & Results Report, (The World Bank, 2018b)

¹² Nationally, in 2004/5, the richest 10% of the population accounted for 46% of total consumption, while the bottom 40% accounted for 15% of total consumption. The share of consumption attributable to the top 10% increased to 53% in 2011, and that for the bottom 40% declined to 13%. This means that over the period 2004-2011, the consumption of the top 10% rose from being about three times higher to being about four times higher than that of the poorest 40%. In terms of consumption, the richest 10% spend 34% more than the poorest 10%. A Dangerous Divide – The State of Inequality in Malawi, (Mussa & Masanjala, 2015).

¹³ Closing the Divide in Malawi – How to reduce inequality and increase prosperity for all, (Mariotti, C., Hamer, J., and Coffey, C., 2018).

¹⁴ Economic development document for the Republic of Malawi, 2017, (International Monetary Fund, 2017)

resulting in poverty because most of the population rely on agriculture for their daily subsistence¹⁵.

Access to the internet can have a significant economic impact on vulnerable groups in society, particularly farmers, and improving access to technology will reduce the growing digital divide¹⁶. As an example, without access to the internet, farmers may have to leave their communities to travel to the next city to pursue a sale. This increases the cost of doing business and the farmers may find the prices have changed by the time they return to their village. This disconnect makes them more vulnerable to price fluctuations and shocks, and threatens food security.

Education underpins efforts to improve the computer literacy rate. The government has increased public spending on education, with the budget as a share of GDP reaching 5.0% by the late 2000s. However, according to the latest data, only 15.8% of the population above the age of 15 complete primary school, while an even lower number (7.9%) complete secondary school¹⁷. Not surprisingly, 38% of the population who are 15 or older are illiterate, which creates additional challenges for the teams trying to boost ICT equipment usage¹⁸.

How inclusivity has been addressed

The identified practice puts public institutions at the heart of plans to expand ICT access in remote areas.

The government has decided to improve ICT access and literacy in remote areas in Malawi through engagement with public institutions. Institutions have been provided with ICT infrastructure, including broadband access, and equipment, such as phones, computers and printers. In return, the institution’s staff members help residents in the community to use the technology for a small fee. For example, people could use the photocopy machine or search for information online with the help of a staff member at their local school, college or information office.

The Practice reduces the costs associated with installing and maintaining an internet connection in rural households and encourages people to use technology provided by public institutions instead. They will receive informal

¹⁵ Vulnerability to Poverty in Rural Malawi, (Mccarthy, Brubaker, & De La Fuente, 2016).

¹⁶ Digital divide is an economic and social inequality, and is about access to, use of, or impact of ICT. The divide refers to inequalities among individuals, households, businesses, or geographic areas, usually at different socioeconomic levels or other demographic categories. (U.S. Department of Commerce, 1995)

¹⁷ Data retrieved from World Bank Education Statistics, (The World Bank, 2010)

¹⁸ Data retrieved from World Bank Education Statistics, (The World Bank, 2015a)

training from government employees. For students, it is a way to learn new skills and utilise new educational and research tools.

Implementation

Training for target institutions and groups

Secondary schools, teacher training colleges and District Information Offices that did not have ICT equipment (such as computers and printers) were identified as target institutions. For all other institutions, the project provided broadband infrastructure and equipment, including a grant to cover the day-to-day running of it, for the first three years¹⁹.

The equipment allocated to each institution was determined by size and estimated demand. The donation was accompanied by general training on how the equipment should be used and maintained. The objective was to help government employees improve the service they provide to the communities and build a business centre around it. They offered access to the equipment for a small fee, which they used to pay for operational expenses, such as the broadband bill²⁰. Training sessions were offered to the institution's staff members with the intention that they would then offer instruction to the community.

For secondary schools, the students were the primary target group and they were given basic training on how to use the computer and the internet. Currently, computer education is not part of the curriculum, although that may change in the future.

The teachers also received training from relevant ministries and the communications regulator, and were responsible for passing their knowledge on to their students. The aim was to expose students to computers as much as possible, creating an awareness of and interest in ICT.

There is a wide range of social benefits associated with improved access to the internet, including skills development. It opens a new world of opportunities for students, nurtures curiosity and encourages them to learn more about what is happening outside their village. Being able to use a computer also improves employability in many roles. Furthermore, it has the potential to strengthen social inclusion through improved communication and access to social networks. Finally, ICT also promotes gender equity, as access to ICT-based economic and educational activities inspires women to contribute to business and home-based activities.

¹⁹ Information on the detailed equipment list (i.e. internet access speed, equipment list) was not made available.

²⁰ The actual fee payable for each service provided by the government institutions has not been made available.

Supervision and monitoring

The Malawi Public Private Partnership Commission was responsible for implementing the project and assigned a team to monitor operational status to ensure beneficiary institutions put the ICT equipment to good use.

The National Statistical Office had no database on ICT access until 2014 when it first conducted a survey on access and usage of ICT services. The first survey took place during the period of RCIPMW implementation, which helped to improve the design in future phases. The survey captured the data and critical indicators at an individual and household level, and the findings inform the government of progressive ICT access strategies and project designs²¹.

Supervising and monitoring usage of the equipment by the students or by other members of the community was not a priority for this project. Instead, the purpose was to donate the equipment to the government institutions and encourage them to create a business centre to help cover their operational costs beyond the initial three years. As future phases progress, monitoring activities are expected to increase.



POLICY, REGULATION AND STANDARDS

Statement of the issue in relation to inclusion and brief introduction

ICT infrastructure in Malawi is underdeveloped and the responsibility for improving it rests with the government. The RCIPMW program was triggered by the country's National Economic Development Plan, which placed special attention on information technology.

The barriers to access to ICT infrastructure, specifically for people living in remote areas, include high cost of internet service (mainly due to the amount of infrastructure investment required and the high operational costs), lack of internet service providers and operators, poor connectivity, limited information on the ICT sector, and illiteracy.

²¹ Chapter 1: Introduction: Survey on Access and Usage of ICT in Malawi, (Malawi Communication Regulatory Authority & National Statistical Office, 2015)

How inclusivity has been addressed

The identified practice is inclusive policy reform to facilitate ICT service provision and access.

There are few ICT service providers at present because it is not financially viable for most companies, due to uncertainty within the industry and a lack of maturity in the market. To offer incentives to companies, Malawi's policy makers are attempting to tackle the dilemma by changing policy.

Implementation

Based on the policy framework document²², the National ICT Policy (2013) aims to provide ICT services, including information technology, telecommunications, broadcasting and postal services, to rural areas, and particularly to vulnerable groups. As ICT becomes increasingly important to economic development, the Government has started to make positive reforms through policy and financial support. Fibre optic cables were installed through the RCIPMW program and an e-school program was made available in public schools, including providing schools with computer laboratories with internet access.

The Strategic Plan 2015-2020, published by the Malawi Communications Regulatory Authority (MACRA), identifies that a growing proportion of young and technologically savvy people between the ages of 10 and 45 demand ICT services. To facilitate access and usage, MACRA has established a financial assistance plan through the Universal Service Fund (USF).

Benefits Realisation

Identified benefit	Benefit description
 <p>Reducing poverty and income inequality</p>	<p>Students in remote areas are given training on how to use computers and the internet, which helps them to gain skills that will be valuable in the future. Exposure to technology enables young people to seek better job opportunities.</p>
 <p>Integration of small business opportunities</p>	<p>Online information helps farmers to better understand market prices and how to maximise their revenues by selecting reputable vendors. People in low-income groups can use real-time information to start their own businesses and increase household income.</p>
 <p>Increasing affordability and accessibility</p>	<p>Internet penetration increased from 0.7% in 2008 to 15.7% in 2016 because of the RCIPMW. The improvement in international internet bandwidth to 11,680 megabits per second (Mbps), from a mere 180 Mbps in 2008, helped to reduce the cost of internet access. The monthly retail price dropped to USD 5.80 in 2016, compared to a prohibitive USD 120 eight years earlier. As of June 2018, 145 educational and government institutions have benefited from the project. Universal access-oriented design of rural communication sub-projects provides subsidies to the private sector to encourage them to invest in rural areas.</p>
 <p>Technical literacy and knowledge sharing</p>	<p>Online training has been conducted for teachers from identified institutions and 163 officers of Ministries, Departments and Agencies (MDAs) and Local Government Agencies (LGAs) to enable them to serve their communities better.</p>

²² An Integrated ICT-led Socio-economic Development Policy and Plan Development Framework for Malawi (Mbvundula, 2003)

Stakeholders

Key beneficiaries	Role
Low-income groups	Low-income groups benefit from long-term universal access.
District Information Offices	The District Information Offices are given free computers and printers to better serve the local community. The offices have the right to charge a minimal fee for certain services.
Secondary schools	The secondary schools are given free computers and printers, which are available to students to use.
Teacher Development Centres and Technical Colleges	The centres are given free computers and printers to better fulfil their teaching mission.
Institutional stakeholders and partners	Role
Malawi Communications Regulatory Authority (MACRA)	MACRA is the national regulator of Information and Communications Technology (ICT) in Malawi and its vision is to ensure the public has universal access to and usage of ICT services across the country.
The Public Private Partnership Commission	The PPP Commission facilitates the implementation of the public-private partnership program through the PPP Policy Framework. One of its key principles is safeguarding the interests of vulnerable groups.
National Statistical Office (NSO)	NSO is engaged in a national survey on ICT services in Malawi.
International Telecommunication Union (ITU)	ITU sets the guidelines and methodology used to capture data on ICT services in Malawi, covering topics such as access to, and usage of, telecommunications.
The World Bank	The financier of the wider Regional Communications Infrastructure Program (RCIP).

Lessons Learned

Success factors

During the preparation stage, the project team **invited communities to engage in consultation** so they could better understand the priorities and potential challenges. The results showed that the educational institutions and training centres that needed the ICT equipment had a limited understanding of business or finance.

While the equipment was given to public institutions for free and accompanied by a grant to cover operational expenses for three years, the government made it clear that the institutions would need to be able to operate a commercially viable business centre in the years that followed to ensure their continued operation. This meant the **beneficiaries had to take responsibility** for maximising the cost-efficiency of the ICT equipment and identifying a practical business strategy.

Key challenges

There have been some cases of the **ICT equipment that was given to public institutions being taken home by officials for personal use**. Although RCIPMW is designed to promote universal access to ICT services, some people have taken advantage of the equipment donation, rather than promoting the national strategy.

Food and other basic needs take priority over ICT services for most residents in rural areas, especially as food insecurity in Malawi remains widespread. 65% of all households (84% of rural households) report that they could not secure sufficient food at least one month per year²³. Furthermore, the poor state of the economy helps explain why many of the beneficiary institutions ceased using the ICT equipment after the three-year grant period expired.

Finally, one of the main reasons for not having internet access at home is that people do not know how to use it. **Low levels of literacy in rural areas make ICT programs hard to implement** and sustain, particularly amongst women, young people and other under-served groups. Only a few officers and teachers are provided with the proper training, so there is a lack of technical professionals to provide the necessary information and support to users.



Figure 1. Malawi's Regional Communications Infrastructure Program (RCIPMW)
Source: Provided by Audrey Mwala, Director - Project Finance and Risk Analysis, Public Private Partnership Commission Malawi



Figure 2. Malawi's Regional Communications Infrastructure Program (RCIPMW)
Source: Provided by Audrey Mwala, Director - Project Finance and Risk Analysis, Public Private Partnership Commission Malawi

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²³ Data from 2013, Economic development document for the Republic of Malawi, 2017, (International Monetary Fund, 2017)

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Interviews

Interview with Audrey Mwala (19 & 26 June 2018), Director of Project Finance & Risk Analysis, The Public Private Partnership Commission, Malawi. (A.Keller, Interviewer)