

**Opportunities for Improving Urban Service Delivery in South Sudan:   
A Tale of Two Cities**

**PART II: International Case Studies**

**September 2017**

*Water trucks in Juba, November 2012.*

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Contents

Acknowledgements iv

Abbreviations and Acronyms vii

Executive Summary viii

Introduction viii

Methodology viii

Case Studies viii

1. Introduction 1

2. Methodology 2

2.1 Research Purpose and Objectives 2

2.2 Methodological Approach 2

2.3 Selection Criteria 2

3. International Case Studies 4

3.1 Water 4

3.1.1 Current situation 4

3.1.2 mWater web platform, Senegal 4

3.1.3 City Taps: Prepaid water metering for urban households, Niamey, Niger 10

3.2 Electricity 14

3.2.1 Current situation 14

3.2.2 Pay-As-You-Go Solar Home Systems, Lumos, Nigeria 15

3.3 Basic Health Care 20

3.3.1 Current Situation 20

3.3.2 Child and Family Wellness clinics, HealthStore Foundation, Kenya 21

3.4 Primary Education 27

3.4.1 Current Situation 27

3.4.2 Trainer-in-the-Hand Approach, English in Action, Bangladesh 28

3.4.3 Eneza Education Mobile phone platform, Kenya 34

Appendixes 41

Appendix A. List of preselected cases 42

Utilities 42

Health 42

Education 42

Appendix B. Selection Criteria Table 43

Appendix C. List of key informant interviews 48

References 49

**Figures**

Figure 3.1. mWater Platform: Governance Structure 6

Figure 3.2. CityTaps’ Smart and Prepaid Water Meter: Governance Structure 10

Figure 3.3. Lumos’ Solar Home System: Governance Structure 16

Figure 3.4. CFW Franchising Model: Governance Structure 22

Figure 3.5. CFW Franchising Model: Current Financial Structure 23

Figure 3.8. Trainer in the Hand: Access to Training Materials on Inexpensive Nokia Phones 29

**Tables**

Table 2.1. Selection Criteria 3

Table 3.1. mWater Platform: Assessment 7

Table 3.2. mWater Platform: SWOT Analysis 9

Table 3.3. Implementing the mWater Platform in South Sudan: Potential Opportunities for World Bank/Donor Support 10

Table 3.4. CityTaps’ Smart and Prepaid Water Meter: Assessment 11

Table 3.5. CityTaps’ Smart and Prepaid Water Meter: SWOT Analysis 13

Table 3.6. Implementing a Smart Prepaid Water Metering System in South Sudan: Potential Opportunities for World Bank Support 14

Table 3.7. Electricity: Sources, Cost, and Hours of Access, Juba 14

Table 3.8. Lumos’ Solar Home System Kit: Composition and Functioning 15

Table 3.9. Lumos’ Pay-As-You-Go Solar Home System Model: Assessment 17

Table 3.10. Lumos’ Solar Home System: SWOT Analysis 19

Table 3.11. Lumos’ Solar Home System: Potential Opportunities for World Bank/Donor Support 20

Table 3.12. CFW Franchising Model: Assessment 24

Table 3.13. Child and Family Wellness Franchising Model: SWOT Analysis 26

Table 3.14. Implementing the Child and Family Wellness Franchising Model in South Sudan: Potential Opportunities for World Bank Support 27

Table 3.15. Trainer-in-the-Hand Approach: Assessment 30

Table 3.16. Trainer-in-the-Hand Approach: SWOT Analysis 33

Table 3.17. Implementing the Trainer-in-the-Hand Approach in South Sudan: Potential Opportunities for World Bank Support 34

Table 3.18. Assessment of Eneza Education’s Education Model 36

Table 3.19. Eneza Education’s Model: SWOT Analysis 38

Table 3.20. World Bank Potential Support to the Implementation of Eneza Education’s Model in South Sudan 40

Table B.1. Water 43

Table B.2. Electricity 44

Table B.3. Basic Health Care 45

Table B.4. Primary Education 46

Abbreviations and Acronyms

ASD alternative service delivery

BPHS Basic Package for Health Services

CFW Child and Family Wellness

CHESS Community Health Education and Social Services

EiA English in Action

GESS Girls Education South Sudan

ICT information and communication technology

LED light-emitting diode

KEPSHA Kenya Primary School Heads Association

KMET Kisumu Medical and Educational Trust

Kwh kilowatt hour

KSh Kenyan Shilling

PEPAM Rural Drinking Water and Sanitation Program

PTLP Primary Teaching Learning Program

SMS Short Message Service

SSP South Sudanese Pounds

SSUWC South Sudan Urban Water Corporation

SWOT strengths, weaknesses, opportunities, and threats

USAID United States Agency for International Development

WSP Water and Sanitation Program

Executive Summary

## Introduction

This report is part of a three-part research study: *Opportunities for Improving Urban Service Delivery in South Sudan: A Tale of Two Cities*. It presents an in-depth analysis of six selected ASD models that are relevant to an urban center context in South Sudan. The four sectors covered in the study are: (1) water, (2) electricity, (3) primary education, and (4) basic health care. Selected models were screened against six criteria: (1) quality, (2) accessibility, (3) accountability, (4) cost-effectiveness, (5) sustainability, and (6) scalability. The potential for the replication of the models are analyzed, and key constraints and opportunities linked to South Sudanese contextual factors are highlighted. A detailed assessment of potential opportunities for the World Bank or other donors to support the implementation of a similar model is provided based on an examination of these factors, and practical recommendations are offered.

In completing this study, there is a recognition that the most recent relapse of South Sudan into armed conflict since the events of July 2016 has resulted in a complete shift toward humanitarian life-saving support. In these circumstances, there is currently little space for policy discourse around long-term development solutions to provision of basic services. This report on international case studies attempts to describe the potential pathways toward more sustainable service delivery through international examples that can be tested in South Sudan once the political and security conditions allow. This report recognizes that to have any real impact on service delivery, the Government financing for basic services would need to increase substantially and there would need to be significant efforts to build capacity of institutions and national at local levels.

## Methodology

This study employed a qualitative research approach, including an extensive desk review on ASD models in the four subsectors and a total of nine interviews with ASD experts and key informants for the selected models. This study also benefits from a first round of household surveys undertaken in July 2016 in Juba.

## Case Studies

##### Water

**Manobi mWater (Senegal) and CityTaps’ Smart and Prepaid Water Meter (Niger)**

Two models presented in this study focus on implementing tools that optimize the operation of existing water delivery networks. Developed in Senegal, Manobi mWater is a mobile database platform designed to facilitate water-network monitoring using multiple small and diverse water distribution points—as most developing country networks do. CityTaps is a smart and prepaid water meter system in Niger designed to match the needs of an urban household with limited income.

* *Relevance to South Sudan.* Water distribution networks in urban areas of South Sudan are a complex mixture of antiquated piped networks, boreholes, water taps, and a large number of water trucks that draw water from water treatment facilities and/or directly from the rivers. Water-point monitoring, centralized data collection, and cost recovery are either completely missing or rudimentary, preventing the network from expanding to fully cover needs of urban residents.
* *Challenges to implementation in South Sudan.* Both models require technical equipment and expertise, which is likely to increase implementation costs. The rudimentary nature of the existing water networks represents a considerable obstacle as well as an opportunity to make a significant impact.

##### Electricity

**Lumos’ Solar Home Systems (Nigeria)**

Lumos’ solar home system in Nigeria consists of a mounted solar energy kit designed to cover the basic electricity needs of a single household. The system is distributed on a rent-to-own basis: the household makes a small down payment for the kit, which allows them to use airtime on their mobile phones to prepay for solar energy. After paying off the full cost of the kit in weekly installments, a household becomes the full owners of the system and no longer has to prepay for its electricity use.

* *Relevance to South Sudan.* There are currently no providers of grid electricity in South Sudan—government or private. Households must manage electricity access for themselves. Lumos provides an efficient household-level alternative to expensive generators that pollute and that depend on the fluctuating price and availability of fuel.
* *Challenges to implementation in South Sudan.* Given the current high levels of crime and conflict in the country, a solar home system could attract a burglary or be left behind in the event that a family is forced to move. Middle-class, rather than poor, households might therefore represent the initial customer base.

##### Basic Health Care

**Child and Family Wellness Clinics (Kenya)**

The Child and Family Wellness (CFW) franchise model, implemented in Kenya since 1997 by the HealthStore Foundation, offers existing clinics and pharmacies—as well as would-be investors—an opportunity to join their network. In exchange for the use of the CFW logo and access to a cost-effective drug and medical equipment supply chain, participating clinics and pharmacies commit to upholding a predefined set of standards. The model therefore provides clinic and pharmacy franchises with business incentives to comply with its regulations and thus provide high-quality and affordable health services.

* *Relevance to South Sudan.* Many health facilities in South Sudan are supported and supervised through a government-run and donor-supported system, but private clinics are widely accessed by patients in urban areas, and they are largely unregulated. A franchise scheme run by a third-party could fill the regulatory gap while the South Sudanese government continues to struggle with all manner of regulations regarding the delivery of basic health care.
* *Challenges to implementation in South Sudan.* Access to a cost-effective and reliable supply chain of basic medicine and medical equipment is the benefit most likely to attract private health care providers to the network, but set-up and maintenance could require significant resources and be prone to insecurity-driven disruptions. In addition, due to the overall low level of skills across the country, finding skilled health care workers to deliver services at the required standards could prove difficult.

##### Primary Education

**English in Action’s Trainer in the Hand (Bangladesh) and Eneza Education’s Mobile Platform (Kenya)**

Both the English in Action's “trainer-in-the-hand” in Bangladesh and Eneza Education’s mobile platform in Kenya address the difficulties faced by many students and teachers in developing countries and in low-income areas in terms of accessing training, teaching, and educational materials. Targeted toward practicing teachers seeking continued professional development in the rural areas of Bangladesh, the “trainer in the hand” is an inexpensive mobile phone preloaded with a year's worth of training materials and instruction. Eneza Education’s mobile platform model brings educational quizzes and learning materials to students in Kenya’s hard-to-reach areas, using only Short Message Service (SMS) technology.

* *Relevance to South Sudan.* The education sector in South Sudan has been in a continued state of development after disruption caused by decades of conflict. Many teachers remain under-qualified and struggle with English as the relatively new language of instruction. Educational materials, including basic textbooks, remain scarce and multiple students often must share them—if they are available at all. Mobile-based resources aimed at students and teachers could act as an equalizer between private, government, and community-run schools in urban areas.
* *Challenges to implementation in South Sudan.* Mobile phone ownership remains limited in South Sudan compared with more developed East African countries, such as Kenya. However, despite the scarcity, an estimated 23 percent of South Sudanese—presumably residing primarily in urban areas—were able to access a mobile phone in 2016.

# Introduction

*Opportunities for Improving Urban Service Delivery in South Sudan: A Tale of Two Cities*, an assessment of alternative service delivery (ASD) models in South Sudan began in March 2016 with three main objectives:

1. Analyze service delivery models in three urban centers in South Sudan and select successful and alternative models in three or four sectors that can be supported and replicated.
2. Analyze and recommend international examples of ASD models that are relevant to the South Sudanese context.
3. Suggest the appropriate role for the government regarding ASD models and the capacity building support needed to ensure the fulfillment of the roles.

A Service Delivery Status report, finalized and delivered on May 25, 2016, summarizes preliminary findings on service delivery in South Sudan’s urban centers. The four key sectors selected for the assessment were primary education, basic health care, electricity, and water; the three urban centers that had been selected were Juba, Wau, and Yei.

The research team finalized and delivered the sampling and design of the quantitative and qualitative tools on June 14, 2016.The team conducted quantitative fieldwork in Juba between June 15 and 27, 2017. The same process was planned for Wau beginning on June 28, but heavy fighting broke out on June 24, and the resulting insecurity and context change forced the research team to suspend its fieldwork and relocate to Aweil. However, on July 7, heavy fighting erupted in Juba, followed by an outbreak of violence throughout the country. The team relocated to Nairobi and suspended fieldwork in Aweil and Yei.

In completing this study, there is a recognition that the most recent relapse of South Sudan into armed conflict since the events of July 2016 has resulted in a complete shift toward humanitarian life-saving support. In these circumstances, there is currently little space for policy discourse around long-term development solutions to provision of basic services. This report on international case studies attempts to describe the potential pathways toward more sustainable service delivery through international examples that can be tested once the political and security conditions allow. This report recognizes that to have any real impact on service delivery, the Government financing for basic services would need to increase substantially and there would need to be significant efforts to build capacity of institutions and national and local levels.

This report presents an assessment of international case studies, including an in-depth analysis of six selected international ASD models that are relevant in the context of South Sudan’s urban centers. The models are screened against the same criteria used in *Part I: Service Delivery Status Report* to select models for study in South Sudan and an analysis is provided of their potential for replication. Based on these assessments, the team suggests practical recommendations for potential World Bank/donor engagement in support of service delivery in the urban centers of South Sudan.

# Methodology

## Research Purpose and Objectives

The research team conducted a desk review of six examples of international alternative service delivery (ASD) models relevant to the South Sudan context. This review synthesizes the strengths and weaknesses of these existing models, drawing key lessons to set the context for potential World Bank or donor support in the future. Specifically, the team:

* Conducted a desk review of existing ASD models relevant to the context of urban centers in South Sudan;
* Interviewed key experts in service delivery to guide the research; and
* Selected one ASD model for each of the four studied sectors and conducted an in-depth assessment of the key contributing factors to their success.

## Methodological Approach

The research team took a qualitative research approach by:

* Conducting preliminary key informant interviews with experts in basic service delivery, especially ASD models with the purpose of collecting all relevant documents;
* Performing a desk review of key examples of ASD models that are relevant to South Sudan’s urban centers;
* Conducting follow-up interviews with key informants and experts to fill any knowledge gaps identified during the desk review;
* Defining selection criteria to focus the research on the most relevant models;
* Selecting one ASD model per studied sector;
* Analyzing the ASD model and its potential for replication in the South Sudan context; and
* Synthesizing key findings from the analysis of the three selected models.

## Selection Criteria

The assessment of the selected ASD models relies on six criteria: (1) quality, (2) accessibility, (3) accountability, (4) cost-effectiveness, (5) sustainability, and (6) scalability. A traffic light system indicates how well the model scores against the criteria: green indicates a high score, yellow is neutral, and red indicates a weak performance.

The replication assessment is based on several contextual factors must be taken into account in all programming in South Sudan. Key constraints and opportunities linked to the implementation of a similar model in the country.

The potential for World Bank or donor support is assessed by examining how a similar model could be financially and technically supported by the World Bank or other donors based on identified key constraints and opportunities.

Table 2.1. Selection Criteria

|  |  |
| --- | --- |
| **Assessment of the ASD Model** | **Quality.** Does the model provide service of good quality to the public? |
| **Accessibility.** Is the model equally accessible in terms of geography across ethnic and social groups? |
| **Accountability.** Using the *World Development Report 2004: Making Services Work for the Poor* framework, are there long-term accountability mechanisms between government, providers, and customers, and if so, are they effective? Are there short-term accountability mechanisms between the providers and the customers/communities? |
| **Cost-effectiveness**. Is this the best use of available resources? |
| **Sustainability.** Is this model sustainable? According to the Organisation for Economic Co-operation and Development, advancing long-term sustainability in service delivery amounts to "helping to deliver essential services in a way that builds accountability and ensures government takes ultimate responsibility." (OECD 2008: 9). |
| **Scalability.** Is the model scalable? A service delivery model is scalable if it can absorb additional funding and thereby increase its outputs (and impact). |
| **Replicability of the model in South Sudan** | **Factors considered include:**   * Security and frequent population movements * Unstable economic environment * Supply chain instability * Overall weak technical and managerial skills * Overall weak and fluctuating purchasing power among end users * Reliance on central or local government * Community tensions |
| **Potential for World Bank/donor support** | How would the World Bank/donor be able to support the implementation of a similar model in South Sudan? |

# International Case Studies

## Water

### Current situation

Water delivery in South Sudan’s urban areas is currently executed through a patchwork of existing piped networks operated by the South Sudan Urban Water Corporation (SSUWC) in some towns or small- to medium-sized water treatment facilities, boreholes, water taps and/or, where available, untreated water is drawn directly from a river. According to a survey conducted in Juba in June 2016, 66 percent of the 400 households interviewed have water delivered to their homes, mostly by the water trucks; the remaining 34 percent rely, at least in part, on fetching water for themselves from a combination of these sources.

SSUWC struggles with cost recovery, preventing it from investing in an expansion of the piped distribution network and ultimately in directly delivering water to most urban households. Today, all households and businesses connected to a piped network pay a small flat monthly fee, regardless of their rate of consumption. Because of the SSUWC’s insufficient capacity, neighborhood water points provide a lifeline for poorer households that are not connected to the centrally located piped networks and cannot afford the cost of water truck delivery. Theoretically, county water departments are responsible for monitoring and maintaining the water points, but no standardized and centralized system exists for monitoring the frequency of water point usage, water quality, and maintenance issues, which may guide decision making around how limited resources should be allocated.

The two models selected in response to the identified challenges both build on optimizing the existing water networks to improve the monitoring, administration, and cost management of the water provisioning system. Implementing a water network online monitoring platform would enable systematic and efficient collection, centralization, and analysis of water data—facilitating network maintenance and creating space for evidence-based policies and investments. Equipping the water grid with smart and pay-as-you-go water meters would allow service providers and users to better control costs and make investments in grid expansions more attractive. Because the government, in the form of the county water department and SSUWC, currently lacks the capacity to implement either of these models, the engagement of a third-party implementing partner could be an effective intermediate solution that could ultimately improve the government’s capacity to manage urban water networks.

### mWater web platform, Senegal

1. **Description**
2. *How does it work?*

mWater is a web platform that uses mobile phone applications and web services to centralize and analyze data linked to the water network. The Senegalese company Manobi developed the platform in 2008. It includes two interfaces: a mobile phone application used to manually enter data linked to the water network and a web platform where the data are centralized and processed.

The mWater mobile phone application works on basic Android smartphones; the water network managers use the application, which enables:

* Mapping of all water network components, including sources and customers;
* Follow-up on water network production volumes; and
* Monitoring commercialization processes, including meter readings and billing.

The central or local administration that manages the water network uses the web platform, which centralizes all collected data and creates automated and regular analyses, including:

* Detailed inventory of the entire water network supply system;
* Technical monitoring, including maintenance follow-up and the need for repairs;
* Commercial follow-up, including the metering of water consumption and corresponding billing; and
* Assessment and benchmarking of different water points, their production, and cost-recovery.

The platform includes a call center where end users can report deficiencies, leaks, and other concerns or complaints.

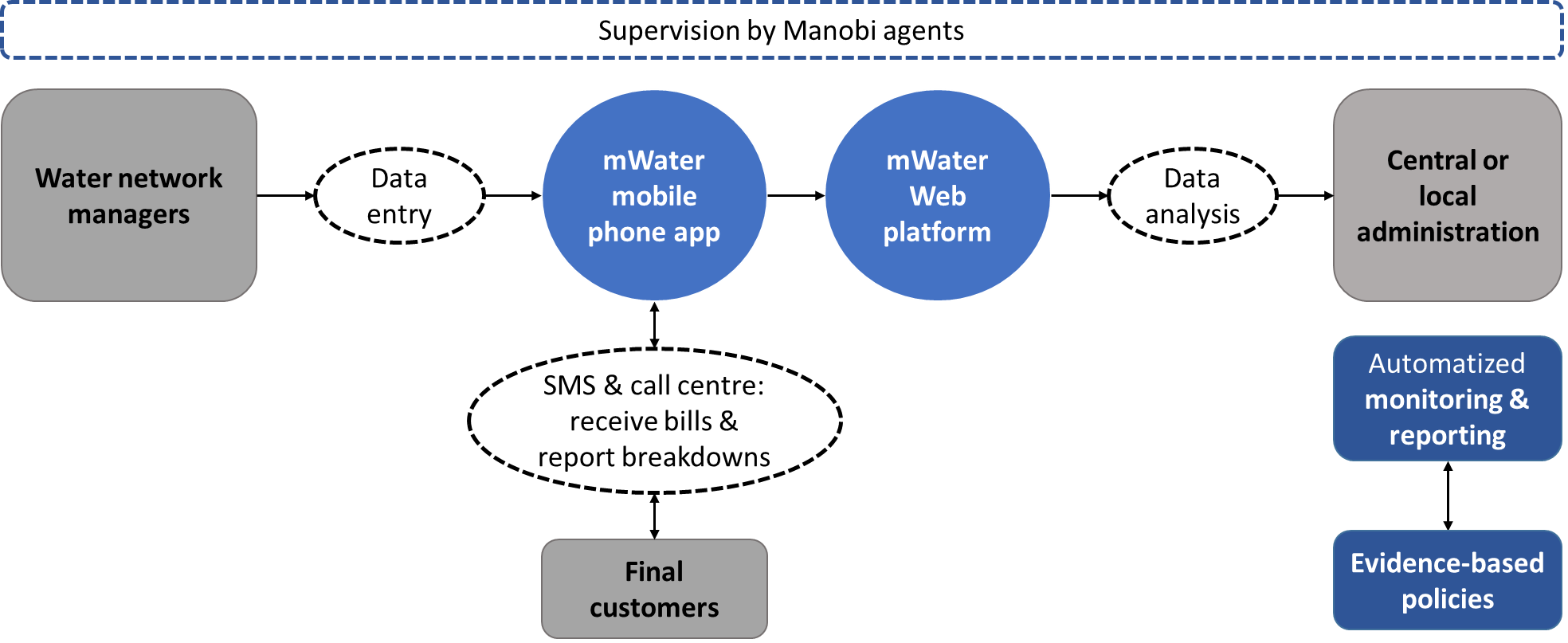
|  |
| --- |
| Photo 3.1. The mWater platform: data collection from mobile phone to web platform |
|  |

1. *Governance and institutional structure*

The mWater platform involves the assignment of the following roles:

* Manobi implementing agents for technical supervision and monitoring of platform use;
* Water network end users who can receive their water bills and report potential failures or breakdowns using the simple Short Message Service (SMS);
* Water network managers using the mWater smartphone application to monitor water production and detect potential breakdowns, enter meter readings, and edit and send bills to end users; and
* Central and local governments using the mWater web platform to monitor the entire water network and make evidence-based decisions.

Figure 3.1. mWater Platform: Governance Structure



1. *Financial structure*

The piloting of the platform in Senegal was a public-private partnership between the Rural Drinking Water and Sanitation Program (PEPAM)—the Senegalese government’s Water and Sanitation Program for the Millennium Development Goals—and Manobi. In other countries, implementation costs have varied by the condition and scope of the water networks. Implementation costs reached US$905 per water network in Benin; US$1,144 in Niger; and US$4,564 in Mali.[[1]](#footnote-1)

According to Manobi, several types of costs should be considered when implementing the platform:

* Water network equipment—all water points should be equipped with simple meters to measure water consumption;
* mWater equipment—investments should be made in platform services and adequate mobile phones; and
* Training on the utilization of both the mobile phone application and the web interfaces.

1. *Clients and staff*

As of June 2013, there were nearly 30,000 water points referenced in Senegal (85 percent of all existing).[[2]](#footnote-2) *End users* are households using the water network. They are not directly involved in the management of the platform, but they can receive their bills and report potential breakdowns via SMS.

1. *Assessment*

Table 3.1 assesses the Manobi mWater platform against the six criteria: quality, accessibility, accountability, cost-effectiveness, sustainability, and scalability. A traffic light system indicates how well the model scores against the criteria: green indicates a high score, yellow is neutral, and red indicates a weak performance.

Table 3.1. mWater Platform: Assessment

|  |  |  |
| --- | --- | --- |
| Quality |  | The model facilitates better monitoring and maintenance of the water delivery network, which ultimately improves the quality of water delivery. |
| Accessibility |  | The platform results in the more effective maintenance of the water network—a breakdown is quickly documented and fixed—and data drive evidence-based recommendations regarding water network expansion based on potential needs. |
| Accountability |  | End users can report breakdowns and leaks using a simple text-messaging format. |
| Cost-Effectiveness |  | The mWater platform requires significant start-up funding in terms of information, communication, technology (ICT) equipment and human resources, but once up and running, it will improve the cost-effectiveness of an existing network. |
| Sustainability |  | The platform was piloted through a public-private partnership between PEPAM—the Senegalese government’s Water and Sanitation Program for the Millennium Development Goals—and Manobi; it is managed in partnership with the Senegalese Water Ministry’s Directorate of Operation and Maintenance (WSP 2010). |
| Scalability |  | The model can be expanded to additional water sources within one network or replicated at other locations. |

1. **Potential for Replication in South Sudan**

Implementation of the mWater platform in South Sudan would enable:

* A detailed mapping of the existing water network;
* An inventory of related equipment;
* Regular monitoring of the condition of all water points, especially potential breakdowns and leaks; and
* Follow-up on water consumption and, therefore, potentially on areas with infrastructure needs.

The billing component of the platform would be difficult to implement in the current context considering the likely inclusion of free access water points in the monitored network. The network could be set up in at least two ways: by the SSUWC to monitor distribution points managed directly by the corporation or by the county water department to monitor all water access points in the county.

**Challenges created by the unstable economic environment.** The mWater platform requires sufficient resources to positively affect the water network quality. This includes material resources to equip all water points with simple metering and fix potential breakdowns and leaks, human resources to conduct regular monitoring of all water points and revise the web platform, and financial resources to invest in any evidence-based water infrastructure needs. In South Sudan, where some of the existing urban water points provide water for free, the implementation of the platform should focus on mapping and controlling the state of the water network and its use. Consequently, implementing the platform would not affect cost recovery for water providers, but it would increase the cost to consumers. This represents a key constraint, particularly for the medium- to long-term financial viability of such a model in the poor economic context of South Sudan.

**Challenges created by insecurity and frequent population movements.** Insecurity could affect the quality and regularity of reporting by preventing teams from monitoring all water points, resulting in missing data. This could significantly lower the effectiveness of the platform, which relies on the implementation of regular, systematic, and centralized data collection and analysis. On the other hand, the mWater platform could improve the response to sudden population movements within urban areas as water needs could be quickly documented and gaps tackled.

|  |
| --- |
| Photo 3.2. Manual data collection through the mWater mobile phone application |
|  |

**Challenges created by the scarcity of technical and managerial skills.** Manobi mWater platform is designed to ensure user-friendly reporting and monitoring and to absorb all data analysis, tailored to the information needed by the administration. A replication of the platform in South Sudan would need to focus on technical assistance and training for all involved: the collection agents who manually enter data through the mobile phone application, local government staff who manage the collection of data; and central government staff who design evidence-based policies to improve the quality and/or coverage of the water network.

**Potential for inclusion of central or local governments.** Most water points in the urban centers of South Sudan are the responsibility of central and local governments. In this context, the Ministry of Dams, Water, and Irrigation should play the leading role in managing the mWater web platform and should ultimately make decisions about resource allocation and potential network investments. Local government entities, such as county water departments and urban councils, have a role to play in the collection of data at the local level and the maintenance of the local water network. Involvement in the implementation of the model would increase the accountability of local governments that currently lack the tools and skills needed to properly manage a water network. This would leverage the government’s accountability in delivering water, but there is the risk of weak political will from central and local government staff since the platform’s implementation would require an effort on their part in terms of adapting to the new system. Enhanced supervision and technical assistance to responsible staff are among the options for lowering this risk.

**Potential for aggravating community tensions.** Installing meters could lead community members to assume that they soon will be charged for water that was previously free. A large-scale mobilization effort to explain to the community how the model works and the reasons for its implementation could mitigate this risk. Community enmity could also result from households discovering that people in other areas have access to more water at a lower cost; this issue will also require management.

1. **SWOT[[3]](#footnote-3) analysis**

Table 3.2 summarizes the chief strengths and weaknesses of the Manobi mWater platform as well as major threats and opportunities linked to its potential implementation in South Sudan.

Table 3.2. mWater Platform: SWOT Analysis

|  |  |
| --- | --- |
| Strengths | Weaknesses |
| * More effective monitoring of water networks improves quality. * With regard to accessibility, regular data collection enables effective maintenance of the water points and creates an evidence base for potential expansions. * Strong accountability—end users can raise complaints or concerns directly through SMS. * Government is involved in the platform implementation and management, ensuring the model’s sustainability. * In terms of scalability, additional funding leads to the development of the platform within a network or to other networks. * Flexible ICT equipment—platform functions with any type of material equipment on the water points and on any Android smartphone. * User-friendly mobile application and web interface. | * Need for strong political leadership and will because using the mWater platform will increase the workload of relevant staff over the short term. * Need for Manobi technical staff on the ground to monitor and guide the use of the platform, especially throughout its implementation. |
| Opportunities | **Threats** |
| * A detailed map of the existing water network in South Sudan’s urban areas needed * Optimizing allocation of identified local and central government human resources responsible for managing the water network * Monitoring of effects of forced displacements and resulting changes in water needs would be strengthened, with the ultimate potential of diminishing tensions between host communities and internally displaced persons (IDPs). | * Insecurity could disrupt the regularity of the water data collection. * The poor economic context could restrict access to the financial and material resources needed to manage the platform, undermining its added value. * Overall weak technical and management skills could lead to inaccurate or inefficient data collection and analysis. * The installation of the water meters could create tensions if people fear an increase of prices or limitations to their water access. * Weak political will or commitment could lead to staff not using or misusing the platform. |

1. **Potential for World Bank/donor support**

An identified challenge in South Sudan is the irregular and ineffective monitoring of the water network, ultimately leading to poor management. The Manobi model provides a smart platform to effectively collect, monitor, and analyze water data. There is great potential for the World Bank or another donor to partner with Manobi or a similar organization to implement the mWater platform in South Sudan. Table 3.3 details how such a model can be supported. While there is room for donors to provide financial support for the project, particularly in terms of the significant initial investment expenditures, local governments could cover the relatively lower recurring costs, including platform fees and equipment maintenance, thus increasing its ownership of the platform and its sense of accountability for delivering water services.

Table 3.3. Implementing the mWater Platform in South Sudan: Potential Opportunities for   
World Bank/Donor Support

|  |  |
| --- | --- |
| Financial | Technical |
| * Investment in Manobi mWater platform services. * Investment in ICT equipment, such as water meters for all water points, mobile phones for data collection, and computers on which central government staff can analyze the data. * Transportation for data collection agents to monitor all water points in urban centers. | * Gap assessments and adequate training for central and local governments focused on data collection, local water network monitoring, revision of the data analyzed by the platform, and decision making regarding potential network investments. * Technical assistance for local governments to increase their commitments. * Training of community mobilizers to ensure extensive communication and to lower the risk of misunderstanding and discontentment. |

### City Taps: Prepaid water metering for urban households, Niamey, Niger

1. **Description**
2. *How does it work?*

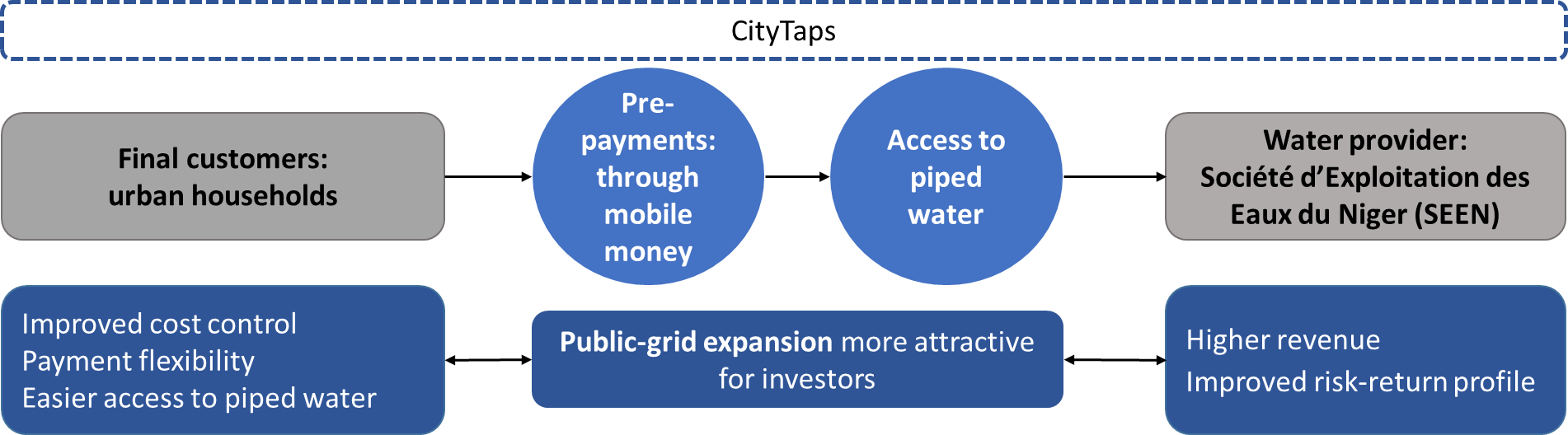
CityTaps installs smart and prepaid meters on water pipes. The model allows customers to make prepayments to the water utility for access to piped water using SMS and a mobile phone. CityTaps seeks to solve the “last mile” problem of bringing piped water to homes by making water utility services affordable to the urban poor. For service users, the model brings flexibility because households choose when and how much to pay. Poor households with irregular income can control their expenses in advance and only pay for the water they consume, rather than a flat fee. For service providers, the system eliminates the costs of billing and customer default. Water utilities access new revenue streams through this approach; their risk-return profile improves, which makes investments in pipe infrastructure more attractive.

1. *Governance and institutional structure*

The CityTaps’ smart and prepaid meter model has been piloted in Niamey by the water provider *Société d’Exploitation des Eaux du Niger*, a private company responsible for the operation of public water services from production to distribution in Niger since 2001. The management of the model involves the following actors:

* The water provider (*Société d’Exploitation des Eaux du Niger*);
* End users: urban or rural households.

Figure 3.2. CityTaps’ Smart and Prepaid Water Meter: Governance Structure

****

1. *Financial structure*

Customers make prepayments using mobile money, which charge credit to their account and unlock their water pipes for the prepaid amount. While the water provider is responsible for installing the smart metering, the model aims at increasing revenue and ultimately improving cost-recovery. The model eliminates the cost of the manual water metering at all end users’ homes and the need to send a technician to follow-up with defaulting customers and shut down their access to water if necessary.

1. *Clients and staff complement*

Water providers are responsible for purchasing and installing the smart metering. End clients are urban households connected to the water grid, especially poor households earning irregular income who struggle to control their expenses. Potential end clients include all the off-grid urban households who could benefit from the prepayment system or an expansion of the grid.

1. *Assessment*

Table 3.4 assesses the CityTaps’ smart and prepaid water meter approach against six criteria: quality, accessibility, accountability, cost-effectiveness, sustainability and scalability. A traffic light system indicates how well the model scores against the criteria: green indicates a high score, yellow is neutral, and red indicates a weak performance.

Table 3.4. CityTaps’ Smart and Prepaid Water Meter: Assessment

|  |  |  |
| --- | --- | --- |
| Quality |  | Quality of water delivery is improved as access to piped water is facilitated for end users, poor urban households who fetched water save valuable time, and the water provenance and therefore quality is ensured. |
| Accessibility |  | Access is strengthened, both in economic and geographic terms. Water providers’ risk-return profile is improved, which makes expansion of the water grid less risky. |
| Accountability |  | No information was found on the existence of feedback mechanisms for end users during this research. |
| Cost-Effectiveness |  | Water providers increase their income by eliminating billing costs and customer default. End users control their expenses by only paying for the water they consume. |
| Sustainability |  | In Niamey, the model does not involve governments. It was piloted through *Société d’Exploitation des Eaux du Niger*, a private company charged with operating the Nigerian public water grid. |
| Scalability |  | The model is scalable within a water grid and in terms of its application to water grids in separate geographic areas. |

1. **Potential for Replication in South Sudan**

Following is an assessment of the potential for replication of the CityTaps’ smart and prepaid water meter in South Sudan against several contextual factors that any programming in the country would need to take into account, highlighting key constraints and opportunities.

The main challenge is South Sudan’s poor economic environment and overall weak level of skills, which could lead to the water provider being unable to repair or maintain its public grid and water meters. Customers could face deficiencies in their meters at home and see their access to piped water restricted. Outdated public infrastructure could lead to water leaks and distorted bills to customers, potentially limiting their access to water.

Increasing SSUWC cost-recovery and ultimately expanding the public grid are the main opportunities presented by the model in the South Sudanese context where only a minority of households have access to piped water. Having water delivered directly into homes ensures its safety for drinking and frees up valuable time, especially that of women and girls in poor households who otherwise must fetch water. The model can be adapted to South Sudan because it relies on a pay-as-you-go system that enables poor households to access piped water while controlling their expenses.

**Challenges created by the unstable economic environment.** In Niamey, the prepayment system relies on mobile money, which is currently unavailable in South Sudan. To maintain the efficiency of the model, other payment options need to be explored, such as a partnership with a mobile network operator that would enable customers to pay for water with their airtime. However, the airtime voucher shortages experienced in South Sudan throughout 2016 make even this alternative solution less than ideal over the short to medium term. The lack of payment options presents a major limitation on the model’s potential for replication in South Sudan because successful cost-recovery is key to its success and to enhancing SSUWC’s ability to invest in infrastructure that would expand the piped water network.

**Challenges created by insecurity and frequent population movements.** Persistent insecurity could affect the ability of customers to prepay for their access to water. However, the model targets customers accessing piped water who usually live in city centers that are better resourced and therefore relatively less prone to long-term displacement. Insecurity and population movements are therefore not expected to significantly impact the model’s functioning over the long term.

**Challenges created by the scarcity of technical and managerial skills.** The inclusion of mobile technology brings with it the need for technical skills at the local level. Repair and maintenance of the system must be effective and rapid, and end customers must learn how to use the system. Implementation in South Sudan should therefore include a plan for a thorough capacity building effort on how to use and repair the system.

**Challenges created by weak and fluctuating purchasing power among end users.** Prepaid water metering represents an interesting opportunity in South Sudan given the typically unstable revenue of urban households. End users would be better able to control their expenses because they would pay in advance the amount of their choosing at the time of their choosing. One challenge to the model’s implementation is that some of the urban population in South Sudan has access to free water points. This population, especially those among the most vulnerable, which the model targets, may not be willing or able to pay more to receive potable piped water directly into their homes.

**Potential for inclusion of central and local governments.** In South Sudan, the model could rely on both national and local governments. The latter could be involved in the management, maintenance, and monitoring of the system at the local level, including potential repair and maintenance of the meters and pipes and monitoring of the prepayment system via airtime and the mobile network. SSUWC, the public water provider, which is under the management of the Ministry of Electricity, Dams, Water, and Irrigation, would implement the model. Central government staff would be involved in the overall monitoring of the water provider’s cost-recovery, price fixing, and decision making regarding potential grid expansion.

**Potential for aggravating community tensions.** Community tensions could arise if customers see their access to water restricted due to the SSUWC’s inability to effectively repair system deficiencies. To lower this risk, an implementation of this model in South Sudan should ensure that the necessary resources are available to allow the water provider to deliver an effective service to the end user. The model could restrict the volume of water that relatively large households can access for a flat fee, which could lead to discontentment among customers and community tensions between, for example, the targeted customers and households that fetch their water—who often have access to free water or pay a flat fee.

1. **SWOT analysis**

Table 3.5 summarizes the main strengths and weaknesses of CityTaps’ smart and prepaid water meters as well as threats and opportunities linked with its potential implementation in South Sudan.

Table 3.5. CityTaps’ Smart and Prepaid Water Meter: SWOT Analysis

|  |  |
| --- | --- |
| Strengths | Weaknesses |
| * In terms of quality, piped water allows households to save the time usually spent fetching water, and it ensures the provenance and quality of the water. * In terms of accessibility, piped water is more affordable to poor households because it allows them to better control their expenses; and it makes potential public grid expansions more attractive. * Piped water offers stronger cost-recovery for the water provider. * The model is easily scalable within a given area; it could also be expanded to another existing water grid. | * In Niamey, the model does not involve government and therefore does not build their accountability, negatively impacting its sustainability. * The model requires specific equipment. * Strong communication and community mobilization efforts to explain the project are necessary; otherwise, the project could be perceived as a restriction to water access, thereby triggering community tensions. |
| Opportunities | **Threats** |
| * The model would improve the weak cost-recovery of the SSUWC and therefore provide more funds for a potential expansion of the SSUWC public grid, which is currently very limited in South Sudan’s urban centers. * There is an absence of an effective regulation on water quality in South Sudan’s urban centers; piped water comes from water treatment plants. * Urban households pay a flat fee for SSUWC water; the model would enable smaller households to pay only for the water they consume. | * The high level of insecurity in the country could prevent customers from purchasing airtime at mobile operator shops or accessing water at their convenience. * The regular mobile network shortages, especially in times of conflict and insecurity, could restrict household access to piped water. * The overall low level of skills could lead to ineffective or slow system maintenance and limit end users’ access to piped water. * The poor state of SSUWC infrastructure could distort customers’ bills and access to water. * Replacing a flat fee with prepayment might restrict access to water for relatively large households and trigger community tensions. * Access to water is free in some urban centers, which may discourage customers from wanting to pay to receive piped water. |

1. **Potential for World Bank/Donor support**

One identified challenge is SSUWC’s poor cost-recovery, particularly triggered by inefficient billing processes. Implementing a CityTaps’ smart and prepaid water meter system would improve cost controls for both water users and providers while making investments in grid expansions more attractive by improving the water provider’s risk-return profile. Yet such a model could be effective if the water provider had the necessary financial resources and technical skills to ensure effective service delivery to the end users. Table 3.6 depicts the potential for donor support to the implementation of such a model in South Sudan.

Table 3.6. Implementing a Smart Prepaid Water Metering System in South Sudan:   
Potential Opportunities for World Bank/Donor Support

|  |  |
| --- | --- |
| Financial | Technical |
| * Installation of CityTaps’ smart and prepaid water meters in houses connected to the public grid. * Supply chains for spare parts or technical materials needed for repair and maintenance. * Support to investments in grid expansions and renovations of outdated pipes. | * Gap assessments and adequate training of government staff engaged in monitoring the model, repair and maintenance, and the billing process. * Training of community mobilizers who will raise community awareness to avoid misunderstanding and to train end users on how to use the system. * Decision making on potential water grid expansions. * Decision making on piped water price fixing. |

## Electricity

### Current situation

At the time of this writing, there was no functioning public or collective electricity source in South Sudan. The South Sudan Electricity Corporation stopped functioning in Juba in July 2015; and the Yei cooperative was shut down in September 2016, because it was unable to purchase fuel for its generators. Access to electricity in South Sudan has since remained scarce[[4]](#footnote-4) and expensive.[[5]](#footnote-5)

Among the 400 heads of household interviewed in Juba in June 2016, 66 percent do not have access to electricity in their homes. Among those with access, 41 percent use a private generator, 38 percent plug into their neighbors’ systems, and 14 percent rely on solar panels. Private generators cost an average of 1,068 South Sudanese Pounds (SSP) per month (US$26 at the time of the research) for 4.3 hours of electricity per day. Respondents plugging into a neighbor’s system pay less (SSP 372 per month: US$9 at the time of the research) and access electricity for 4.7 hours per day on average. Households using solar systems access electricity for almost twice the amount of time—an average of 9.2 hours per day (see table 3.7).

Table 3.7. Electricity: Sources, Cost, and Hours of Access, Juba

|  |  |  |  |
| --- | --- | --- | --- |
|  | Access  (Percentage of Respondents) | Monthly Cost, SSP (Average) | Daily Hours (Average) |
| Private generator | 41 | 1,068 | 4.3 |
| Plugging into neighbor’s system | 38 | 372 | 4.7 |
| Solar panel | 14 |  | 9.2 |

*Note:* n=400.

One identified challenge is the electrification of areas where the central government does not offer a functioning public grid and where alternative energy infrastructure is scarce and fuel-based, combined with an overall unstable economic environment. A pay-as-you-go solar home system, developed in Nigeria by Lumos, has the potential of addressing these issues. The model relies on solar energy, which tackles the issue of monetary instability and the need for kerosene and diesel. The systems are implemented at the microlevel (household or small business) and are based on a lease-to-own system, adapted to an overall poor economic environment.

### Pay-As-You-Go Solar Home Systems, Lumos, Nigeria

1. **Description**
2. *How does it work?*

Lumos[[6]](#footnote-6) is an off-grid electricity provider. The company brings solar electricity to homes and small businesses outside the electricity grid or that cannot afford the cost. After making an initial payment, a customer picks up an installation kit at the nearest mobile operator shop and installs it their home or business. Access is pay-as-you-go: customers prepay for the service by sending SMS through their mobile phones; they can then use solar electricity for the amount of time corresponding to their prepayment, which is then deducted from their airtime allocation. The system is lease-to-own: once the cost of the system is covered through regular payments,[[7]](#footnote-7) the customer then owns the kit and can access solar energy for free. Table 3.8 describes the composition of a basic kit and lists the appliances that can be run on the system.

Table 3.8. Lumos’ Solar Home System Kit: Composition and Functioning

|  |  |
| --- | --- |
| Composition of Basic Kit | Appliances that can be powered/charged from fully charged battery (6 hours of direct sunlight) |
| * An 80-watt solar panel unit and solar cable * An indoor battery and solar control unit with  8 sockets direct current 12 voltage max * A USB mobile phone adapter * Two light-emitting diode (LED) bulbs and a simple self-installation and mounting kit | * Two LED lights, strong enough to light a room for 5 hours * Several mobile phones * Fan for 4–6 hours * Small television set for 4 hours * Small radio for 10 hours * Personal computer or laptop |

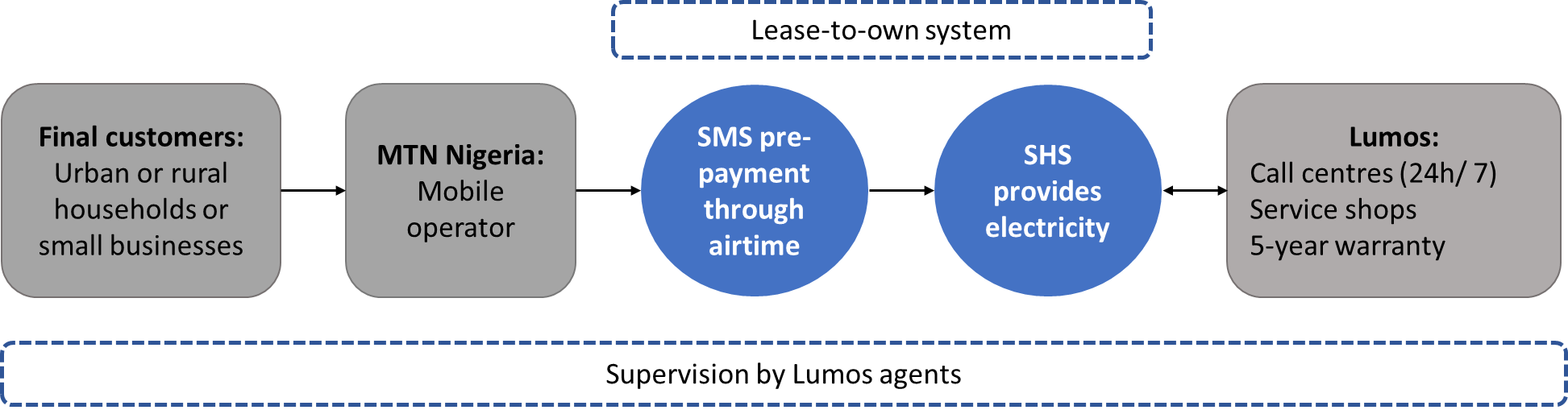
1. *Governance and institutional structure*

Lumos is a private, for-profit social business model that involves the following actors:

* Customer service call centers and on-the-ground service shops;
* MTN Nigeria, a partner mobile operator that enables customers to pay via simple SMS; and
* End customers.

National and local governments are not involved.

Figure 3.3. Lumos’ Solar Home System: Governance Structure



*Financial structure*

The cost of the solar home system is low; it is targeted toward the poor and offered on a lease-to-own basis. There is an initial one-time payment of 5,000–10,000 ₦ (US$16–32) (Ekanem 2014), after which customers spend an average of 200 ₦ (US$0.64) per week for energy. Once the system’s cost is recovered (after an average of 1,500 days of use), the customer owns the system. Customers spend an average of US$162 to purchase the system. By comparison, the complete setup of 20-watt panel capacity starts at an estimated US$150.

1. *Clients and staff*

Lumos targets homes and businesses that are not part of a main electricity grid or who cannot afford the high costs related to grid connection or generator usage. In most cases, such populations do not have the necessary cash to pay for a solar system upfront.

In terms of staffing, the system relies on Lumos’ technicians through the call centers and the service shops; the mobile operators with whom Lumos partners; and end users.

1. *Assessment*

Table 3.9 assesses Lumos’ pay-as-you-go solar home system model against six criteria: quality, accessibility, accountability, cost-effectiveness, sustainability, and scalability. A traffic light system indicates how well the model scores against the criteria: green indicates a high score, yellow is neutral, and red indicates a weak performance.

Table 3.9. Lumos’ Pay-As-You-Go Solar Home System Model: Assessment

|  |  |  |
| --- | --- | --- |
| Quality |  | The system delivers cheap and clean energy and comes with a five-year warranty and access to a customer call center. It incorporates a smart interface to facilitate long-distance maintenance support. |
| Accessibility |  | Access is improved in terms of geographic coverage and affordability because Lumos enables poor households to possess an individual solar system through its lease-to-own system. |
| Accountability |  | End users can rely on call centers and service shops for needed repairs or maintenance. |
| Cost-Effectiveness |  | The pay-as-you-go system allows customers to control their expenses and to own the system after the equipment cost is covered. The model also includes the provision of two light-emitting diode (LED) lamps to ensure efficient energy use and spending. |
| Sustainability |  | The system does not involve central or local government. |
| Scalability |  | The model is scalable within a single area because there are no infrastructure requirements other than access to mobile phone coverage. It is also scalable to other countries; that would involve setting up call centers and on-the-ground service shops. |

1. **Potential for Replication in South Sudan**

The main challenge lies in the business risk associated with the replication of the model. The insecure context, resulting in frequent population movements, could discourage customers from investing in a solar home system. Their unstable purchasing power could also lead to highly irregular payments or halting of payments, which would endanger the financial viability of Lumos.

Photo 3.2. Lumos’ basic solar home system kit and adapted electric appliances



On the demand side, the platform seems adaptable to South Sudan’s electricity challenges, which are based on a combination of a lack of functioning infrastructure and an overall weak purchasing power. Lumos’ solar home system represents a key opportunity: it provides cheap and clean energy to poor households that cannot afford to pay upfront for an individual solar system.

**Challenges created by insecurity and frequent population movements.** The country’s overall insecurity could negatively impact the model because households may fear theft. The system is equipped with a smart interface that enables the user to control it from a distance, but some may steal the system to resell the solar panel. Therefore, acquiring a solar home system could endanger a household. Frequent forced displacements could also create strong disincentives to invest in individual energy sources, especially in large equipment like solar panels, which cannot be easily transported.

**Challenges created by weak and fluctuating purchasing power among end users.** The pay-as-you-go system is adaptable to South Sudan’s overall weak and unstable purchasing power because it enables households to pay at their own pace, in line with a potentially irregular income. Poor households access solar energy and ultimately own their individual electricity source. Once the equipment cost is covered, households access free energy, saving the money they would have spent to purchase fuel or kerosene. The model is therefore adapted to the demand side. On the supply side, however, highly irregular payments or the halting of payments could undermine the financial viability of Lumos, whose model is based on small but regular payments and a service aiming to scale up. Donors could mitigate this risk by providing collateral to the company that would limit its financial risk, particularly in the event of renewed violence or the deterioration of the economic environment.

**Challenges created by the scarcity of technical and managerial skills.** The solar home system arrives as a self-installation kit. It is designed to be user-friendly and customers can consult call centers with questions. The objective of the model is to maximize remote maintenance and thereby lower costs. The system offers a smart and easy-to-use interface, but it may not be compatible with the country’s overall weak technical skills among end users as well as the technical staff at the customer care service shops and call centers. Lumos’ staff would require rigorous training; and the overall low level of technical skills would require more on-the-ground maintenance in the South Sudan context, which would increase the operating costs of the company.

**Potential to aggravate community tensions.** The most significant assessed risk is linked to security and potential theft of solar panels, which could trigger community tensions. Such a risk will be difficult to eliminate considering the overall poor economic environment and insecure context, but it could be mitigated through extensive communication efforts regarding the system’s remote control that causes the system to shut itself off if a theft is detected.

1. **SWOT analysis**

Table 3.10 summarizes the main strengths and weaknesses of Lumos’ solar home system as well as the main threats and opportunities linked with its potential implementation in South Sudan.

Table 3.10. Lumos’ Solar Home System: SWOT Analysis

|  |  |
| --- | --- |
| Strengths | Weaknesses |
| * Reliable customer service based on quality call centers and service shops as well as a five-year warranty. * Improves economic and geographic access, because it provides cheap energy and the potential for a poor, off-grid household to own an individual solar system. * Call centers provide accountability by enabling customers to raise complaints and doubts. * The inexpensive service based on maximized in-area maintenance and lease-to-own system that ultimately enables access to free energy makes this model cost effective. * The potential for scalability is strong—no infrastructure investment is required. * The system includes a smart interface that automatically checks on how well the system is functioning. | * Sustainability—the model does not foster government accountability in delivering electricity. * The leasing period is long (an average of 1,500 days), which could discourage customers. |
| Opportunities: | **Threats:** |
| * On the demand side, the model is adapted to the overall low and irregular purchasing power of its end users. * There is currently no functioning electricity source in South Sudan—public or collective. * The volatile monetary context makes purchasing kerosene a challenge. * Poor urban households cannot afford to pay upfront for a solar home system. * Private generators kept within houses (to avoid theft) create significant health problems. * The target urban households should have easy access to mobile operators and service center shops. | * On the supply side, irregular prepayments or halting of payments could endanger the financial viability of the model. * Phone networks and airtime availability are unreliable. * High insecurity and frequent population movement could discourage households from investing in the system. * Outside solar panels could trigger theft and ultimately community tensions. * The overall low level of technical skills may not be adapted to the model’s maximized in-area repair and maintenance, with regard to both customers and call center staff. * To effectively serve all urban customers, call centers will need trained and multilingual staff. |

1. **Potential for World Bank/Donor support**

One identified challenge is the electrification of off-grid areas, where the government does not have the capacity to make large investments in infrastructure and where households struggle to pay for fuel or to purchase a solar system. In such a context, Lumos’ solar home system has great potential because it is inexpensive and clean energy and because of its pay-as-you-go and lease-to-own system.

Initially, the model seems appropriate for the overall poor economic environment, but its viability could be threatened by the high insecurity, unstable purchasing power, and low level of locally available technical skills. While Lumos is a private, for-profit social business model, a donor could potentially provide technical and financial support, according to the South Sudan context (see table 3.11).

Table 3.11. Lumos’ Solar Home System: Potential Opportunities for World Bank/Donor Support

|  |  |
| --- | --- |
| Financial | Technical |
| * Provide Lumos with financial collateral to mitigate their risk in the event that many customers pay very irregularly or stop paying for their solar home systems. | * Train of call center and service shop staff. * Ensure that the in-area technical support is adequate, in terms of languages and level of skills. * Train community mobilizers to ensure strong communication outreach efforts about how the model functions, focusing on its smart antitheft interface. |

## Basic Health Care

### Current Situation

The South Sudan health sector is dominated by the Basic Package for Health Services (BPHS) system that regulates primary health services provided at government facilities. Two main donors support the system: the Health Pooled Fund, led by the Department for International Development consortium, and the Health Rapid Results Project financed by World Bank. A significant volume of aid is invested in the system—the fund's budget is expected to reach estimated 130 million British Pounds from April 2016 to March 2018. The BPHS supports a minority of private inexpensive and faith-based facilities, leaving the majority of nongovernment facilities outside the system even though they represent an important part of health service delivery in urban areas. According to the survey carried out in Juba as part of this study in June 2016, 36 percent of the 400 respondents went to a private provider for their last health visit, 28 percent to a BPHS primary health care center, and 28 percent to a government-run hospital.

If operating outside of the BPHS, private providers are subject to few regulations. Since 2014, private providers are formally regulated through a relatively new regulatory body— the General Medical Council—that has yet to prove effective. In this context, private facilities have poor financial incentives to deliver high-quality health services, particularly given the high cost of procurement in the country. According to a senior USAID (United States Agency for International Development) health program manager based in Juba: “Some private facilities deliver worryingly poor quality services, relying on inaccurate diagnosis and poor quality drugs delivered by unqualified doctors.”

A potential solution to the problems created by the lack of regulation of private health facilities in South Sudan’s urban areas can be found in the Child and Family Wellness (CFW) clinic model implemented by the HealthStore Foundation in Kenya in 2000. The Kenyan model focuses on the expansion of affordable and quality health care across the country, but it could be adapted to be a voluntary self-regulating scheme that targets private-sector providers in South Sudan.

### Child and Family Wellness clinics, HealthStore Foundation, Kenya

1. **Description**
2. *How does it work?*

The CFW clinic model is based on a commercial franchise system, in which franchisees earn profits and own a valuable business asset conditioned on compliance with the franchisor’s quality standards. Applied to the health sector, the CFW franchise model builds a network of health facilities with financial incentives to provide quality health care.

The standard CFW contract gives clinic and pharmacy franchises the right to operate facilities under the CFW logo and receive benefits such as training and access to a centralized medical equipment and drug supply chain. In exchange, the franchisee agrees to comply with brand standards, such as clinical care and drug handling as well as hygiene, signage, fixtures, furnishing, equipment, marketing, and record keeping—defined under the comprehensive *effective quality care* standard. Noncompliance leads to an immediate revocation from the network.

The CFW model relies on the following key components:

* Franchisees receive the *franchise operating system*,[[8]](#footnote-8) which includes the standards and guidelines that must be respected to meet the effective quality care standard;
* The franchisor implements a compliance program that involves field officers making unannounced visits to franchise locations to confirm compliance;
* Franchisees are supported with access to training and centralized supply chains and benefit from CFW’s visibility and branding; and
* Franchisees implement a standardized record-keeping system, which compiles patient records and vital health statistics as well as financial performance statistics for every franchise location.

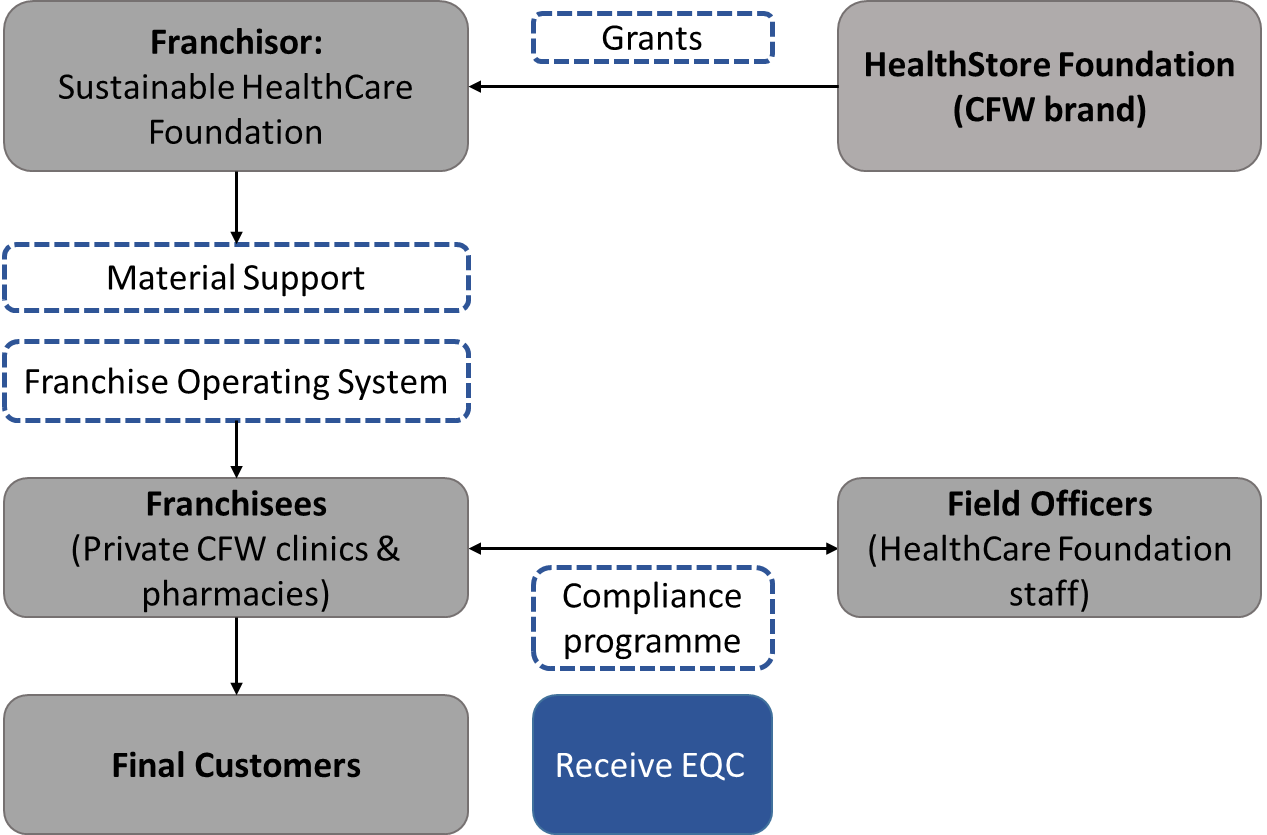
|  |  |
| --- | --- |
| Photo 3.3. CFW pharmacies and clinics, Kenya | |
| C:\Users\Flora\AppData\Local\Microsoft\Windows\INetCacheContent.Word\CFW shops.jpg | C:\Users\Flora\AppData\Local\Microsoft\Windows\INetCacheContent.Word\CFW clinics.jpg |

1. *Governance and institutional structure*

The CFW model in Kenya involves the following actors:

* HealthStore Foundation, the implementer of the model, which owns the CFW brand;
* Sustainable Healthcare Foundation, the franchisor: a Kenyan nongovernmental organization funded by the HealthStore Foundation, which employs field officers to check on franchisees to ensure they are complying with the effective quality care standard;
* Pharmacy and clinic franchises, which are privately-owned; and
* End customers.

Figure 3.4. CFW Franchising Model: Governance Structure



1. *Financial structure*

Under the model currently implemented in Kenya, franchise operators receive no cash support from the franchisor. Aspiring franchise operators are required to come up with 10 percent of the US$5,000 start-up cost required to establish, equip, and prepare a clinic to operate under the CFW brand, with the remaining US$4,500 advanced as a loan by the HealthStore Foundation. In addition to the access to start-up funding, franchises gain access to a training program and are able to purchase drugs and medical equipment through a centrally run supply chain—both financed by the HealthStore Foundation.

Unlike a purely commercial franchise model, CFW franchises are not currently required to pay royalties to the franchisor. Instead, in exchange for inclusion in the CFW network, they are expected to provide free health care to patients otherwise unable to afford it[[9]](#footnote-9) (figure 3.5). At the time of this writing, the average price for a basic consultation at a CFW clinic was KSh 300–350 (approximately US$3.00–3.50).

According to Scott Hillstrom, the Chairman of the Board and Co-Founder of the HealthStore Foundation, who was interviewed as part of this research, the model’s financial structure is about to change. The objective is to involve private investors and thus allow the network to grow.

|  |
| --- |
| Figure 3.5. CFW Franchising Model: Current Financial Structure |
|  |
| **Figure 3.6. CFW Franchising Model: Future Financial Structure** |
|  |

Under the future model (see figure 3.6), the franchisor not be nongovernmental organization anymore—it will a private entity. It will receive a one-time US$1,000 franchise fee and royalties from the franchisees and in return will pay a return on investment to its investors. The franchises will no longer be required to cover the cost of free health care, which will enable them to pay royalties to the franchisor. Vulnerable patients would receive financial support through a dedicated fund supported by a range of actors, including the World Bank Global Financing Facility and the Kenyan government.

1. *Clients and staff*

According to Scott Hillstrom, it is “more challenging to include an existing health center and change its whole system than to open a new one.” As a result, most Kenyan franchise locations are newly created health facilities. In most cases, clinics are operated by qualified nurses who are legally entitled to operate a health center. The pharmacies are run by community health workers, who are limited to distributing drugs and basic advice—they are not allowed to treat patients. In both cases, end customers are urban or rural residents, regardless of their capacity to pay for primary health care services.

Since 2000, the CFW network has more than quadrupled in size to 65 locations: 17 pharmacies and 48 clinics. The network treats an average of 40,000 customers/patients per month. Since its inception, the network has served over 5,000,000 patients and customers in Kenya (Perrigot 2016).

1. *Assessment*

Table 3.12 assesses the existing CFW model against six criteria: quality, accessibility, accountability, cost-effectiveness, sustainability, and scalability. A traffic light system indicates how well the model scores against the criteria: green indicates a high score, yellow is neutral, and red indicates a weak performance.

Table 3.12. CFW Franchising Model: Assessment

|  |  |  |
| --- | --- | --- |
| Quality |  | The model creates incentives for franchises to consistently deliver services that adhere to high-quality standards through the franchise operating system distributed to all the franchises and through the implementation of a strict compliance program. |
| Accessibility |  | The model facilitates the geographic expansion of high-quality health care at an affordable price and with provisions for the delivery of free care to the most vulnerable patients. |
| Accountability |  | Franchises are subject to regular checks and risk revocation from the franchise in cases of noncompliance. However, there are no institutional feedback mechanisms for end users to raise their doubts and concerns. |
| Cost-Effectiveness |  | The start-up financial investment per franchise requires approximately US$5,000. However, once the franchise has been set up, it can delivers high quality and affordable care thanks to the centralized procurement process that drives down drug costs. |
| Sustainability |  | Based on a commercial franchise system, the model does not involve the government in implementation. |
| Scalability |  | Additional funding to the franchisor could lead to an increase the number of franchises, but an aggressive expansion strategy could cause tensions among incumbent providers that do not meet the franchise standards. |

1. **Potential for Replication in South Sudan**

There are two key constraints to potential replicating the CFW model in South Sudan: an unstable economic environment and a lack of qualified medical staff. In Kenya, the model offers access to capital and takes advantage of the many qualified nurses and medical staff who are available to run the newly created facilities. In South Sudan, the cost of establishing new clinics and pharmacies could be prohibitive, and even existing medical establishments suffer from an acute shortage of qualified staff. For this reason, it might be necessary to adjust the model design to focus on the regulation of existing private providers rather than an expansion of the coverage of health care facilities.

Although the obstacles that potential implementers of a CFW-style model must face are significant, they mirror those faced by the majority or those trying to implement programs in South Sudan. As expensive and difficult as any effort is, an improvement in the quality of private health care delivery or access to safe drugs and equipment could have a significant impact on the local population

1. **Challenges created by the unstable economic environment.** The volatile economic situation, characterized by rapid inflation, scarcity of capital, and chronic shortages of hard currency, drive up the potential costs involved in implementing the CFW model in South Sudan. The unstable environment limits the CFW model’s potential to expand the coverage of health care facilities because current and would-be private facility owners may be unable to contribute the 10 percent start-up capital or unwilling to take out a loan for the remaining 90 percent. The instability is also likely to significantly strain the model’s supply chain.

Given these conditions, the primary focus of the model in South Sudan should not be on increasing the geographic coverage of health care but rather on improving quality of care by motivating the existing private facilities in urban areas to subscribe to the franchise and its standards. While management of the associated supply chain would almost certainly be extremely costly, a centralized process that facilitates access to quality medical materials could stimulate a high level of interest among potential franchisees and save the lives of scores of urban patients.

In addition, the difficulty of attracting private investors to South Sudan would almost certainly require the franchisor to be a donor-funded nongovernmental organization, like the current model in Kenya. A medium- to long-term transition to a private investor does not seem viable in the current South Sudanese context.

1. **Challenges created by the scarcity of technical and managerial skills.** The CFW model is based on a turnkey management system. The key factor to its success is the ability of franchise staff to implement the operating manual and deliver services that meet the effective quality care standard. To mitigate the risk created by the scarcity of qualified and skilled medical staff in South Sudan, the adapted model should focus on staff training and designing detailed franchise operating system that is simple and easy-to-understand.

The country’s overall lack of qualified nurses and medical staff—in addition to a lack of capital—limits the potential for expanding the model to new facilities. This is further evidence that the best approach would be to focus on introducing the franchise standards to existing medical facilities in urban areas.

1. **Potential for inclusion of central and local governments.** The model is based on a commercial franchise system that does not rely on government involvement. There is, however, a potential opportunity to involve the public administration of South Sudan in an adapted version of the model. At the central level, the Ministry of Public Health would be required to sign off on the quality standards implemented by the franchisee, and local governments could play a role in the franchise compliance monitoring system under the oversight of the franchisor.
2. **Challenges created by insecurity and frequent population movements.** The model’s implementation is unlikely to be significantly affected by insecurity and population movements beyond possible supply chain disruptions. To the contrary, a network of quality clinics and pharmacies with recognizable branding in major urban centers could help internally displaced persons, returnees, and refugees in need of health services easily orient themselves in an unfamiliar environment and find trusted facilities.
3. **Potential for aggravating community tensions.** The assessed risk of generating community tensions is low because the model that would be adapted to the South Sudanese context would aim to work with existing clinics and pharmacies and would benefit both franchisee and patient. The model relies on the trust of the community, so communication and awareness-raising efforts are key to successful implementation.
4. **SWOT analysis**

Table 3.13 summarizes the strengths and weaknesses of the CFW franchise model, as well as the main threats and opportunities linked with its potential implementation in South Sudan.

Table 3.13. Child and Family Wellness Franchising Model: SWOT Analysis

|  |  |
| --- | --- |
| Strengths | Weaknesses |
| * Improved quality of health care delivery—franchises consistently meet the standard for delivering effective quality care. * Increased accessibility with the creation of new clinics and pharmacies. * Health care costs driven down by a centralized procurement system. * Additional funding allows scaling up of network. | * **Accountability to end users is weak**—there are no patient feedback mechanisms. * **Sustainability is weak**—government is not involved. * There is a risk of shutting down **existing health facilities*,*** exacerbating **community** **tensions**. * There are **significant human resource** needs (field officers) for the compliance program. |
| Opportunities: | **Threats:** |
| * South Sudan Ministry of Health could increase its involvement with the services offered by nongovernmental facilities. * Help address the strong need for high-quality and affordable nongovernmental clinics and pharmacies in urban areas. * Regular population movements foster a strong need for a recognizable and trusted network of health facilities in urban areas. * Program could serve as a pilot and eventually become embedded within government regulatory structures if proven successful at ensuring high-quality health services. | * The **poor economic environment** could create **disincentives** for health facility owners and entrepreneurs **to invest financial and human resources** to enter the franchise. * The overall **low capacity of medical staff** could challenge the delivery of the effective quality care standard as well as the usefulness of compliance visits. * **Insecurity** could **disrupt supply chains** for medical equipment and drugs, lowing the quality of care or driving up prices. * Health facilities might not have **adequate cold chain storage facilities** to adequately preserve drugs accessed through the franchise. |

CFW = Child and Family Wellness.

1. **Potential for World Bank/Donor support**

Table 3.14 presents potential for replicating the CFW model in South Sudan. A donor could potentially partner with the HealthStore Foundation—which has accumulated experience in expanding the model using a number of different mechanisms—or another implementer experienced in applying the franchise model to service delivery.

In 2005–06, the HealthStore Foundation advised a Ghanaian-American entrepreneur looking to launch his own franchise health care network in Ghana. From its inception, the network was branded, financed, and operated independently from the foundation and its CFW network in Kenya. As of 2016, the Ghanaian franchise includes 17 comprehensive medical clinics and was acquired by Sanford Health, with plans to grow the network to 300 clinics by 2020 in partnership with the Ghanaian government.

In other instances, the foundation has been more closely involved in the development and launch of a franchise network. For example, between 2007 and 2011, it launched and ran a franchise health care network in Rwanda before transferring it to One Family Health, a local offshoot organization.

Table 3.14. Implementing the Child and Family Wellness Franchising Model in South Sudan:   
Potential Opportunities for World Bank/Donor Support

|  |  |
| --- | --- |
| Financial | Technical |
| * Fund an implementer to cover the implementation cost of the franchises. * Invest in drug storage facilities. * Support the procurement of drugs and subsidize the cost of procurement if necessary. * Support the capacity of franchises to deliver free health care to the most vulnerable. * Hire field officers for the compliance program. * Hire community mobilizers to conduct awareness campaigns. | * Design the **franchise operating system** in cooperation with the central government. * Support the **planning and logistics** for the procurement of drugs and medical equipment. * Conduct **gap assessments and training** of the **medical staff.** * In cooperation with local government, conduct **gap assessments and training** of **field officers** to monitor the compliance of the franchises. * **Train community mobilizers** to implement an awareness campaign throughout implementation. |

## Primary Education

### Current Situation

Girls Education South Sudan (GESS) is the largest internationally funded program supporting primary schools in South Sudan. Although it is nominally focused on girls’ education, one of the program's main components involves facilitating the distribution of capitation grants in collaboration with the central government. Any primary or secondary school that does not generate a profit is eligible for a capitation grant to purchase educational materials and cover their running costs, including government, community-run, religious, and private schools, as long as they are inexpensive.

Despite the capitation grant support, the availability of educational materials remains a challenge for schools and students—even in urban areas. In a June 2016 survey, 50 percent of the 400 heads of households interviewed in Juba reported that textbooks are not made available at their children’s primary school. Access to teaching materials becomes even more challenging in towns affected by conflict, where schools can be temporarily shut down, for internally displaced and refugee children forced to stop attending schools, and for children struggling to attend school regularly because they must help their family by earning a living. The lack of instructional materials also affects teachers—who often have only received minimal professional training or who have not been formally retrained to teach in English after it became the country’s official national language in 2011.

Successful implementation of projects using inexpensive mobile phones to deliver training and educational materials to teachers and students in Kenya and Bangladesh demonstrate the potential of using alternative distribution channels. In Kenya, mobile phone instruction was originally used to reach students in remote areas. In South Sudan, the approach is better suited to urban areas where ownership of mobile phone is more common and the electricity needed for recharging is more accessible.

### Trainer-in-the-Hand Approach, English in Action, Bangladesh

* **Description**

1. *How does it work?*

“Trainer in the hand” is an approach that is part of the English in Action (EiA) Primary Teaching Learning Program (PTLP), implemented in Bangladeshi primary and secondary schools since 2008. It aims at improving the quality of English instruction with a twofold strategy. First, it seeks to directly improve the quality of lessons by offering attractive and stimulating classroom materials for teachers, including an interactive, audio-based instructional package supplemented by visual materials, such as posters and flash cards, along with detailed guidance. The approach fosters effective professional development for teachers based on a combination of in-person training sessions and distance learning materials in audio, video, and print form. All audio and video resources (for training or classroom use) are hosted on an inexpensive mobile phone.[[10]](#footnote-10) Teachers are also given an amplified portable and rechargeable loudspeaker that lets them use audio as part of their classroom teaching.

The effectiveness of the approach depends on several key factors. First is the continuity of training. While the program includes four in-person training sessions per year, the mobile phone given to the teachers contains an entire year’s worth of training materials, accessible offline when and where teachers want access to it. In addition, the training is directly applicable to local context: videos depict concrete “good” versus “wrong” teaching practices based on the experiences of teachers and lessons learned, making the training less theoretical and more practical. The program fosters peer support by forming local-level teacher networks that allow participants to share ideas, challenges, and lessons. Advanced teachers in the network are selected as *facilitator teachers* who assist their peers and make supportive visits to teachers in their classrooms. The program also engages with head teachers, which helps to create a school-level environment that is conducive to changing practices and monitoring teacher progress. Finally, the materials strictly follow the national curriculum. Monitoring and evaluation assessments throughout the program have demonstrated enhanced student participation and an increase in the use of English in the classroom as a result of the intervention.

1. *Governance and institutional structure*

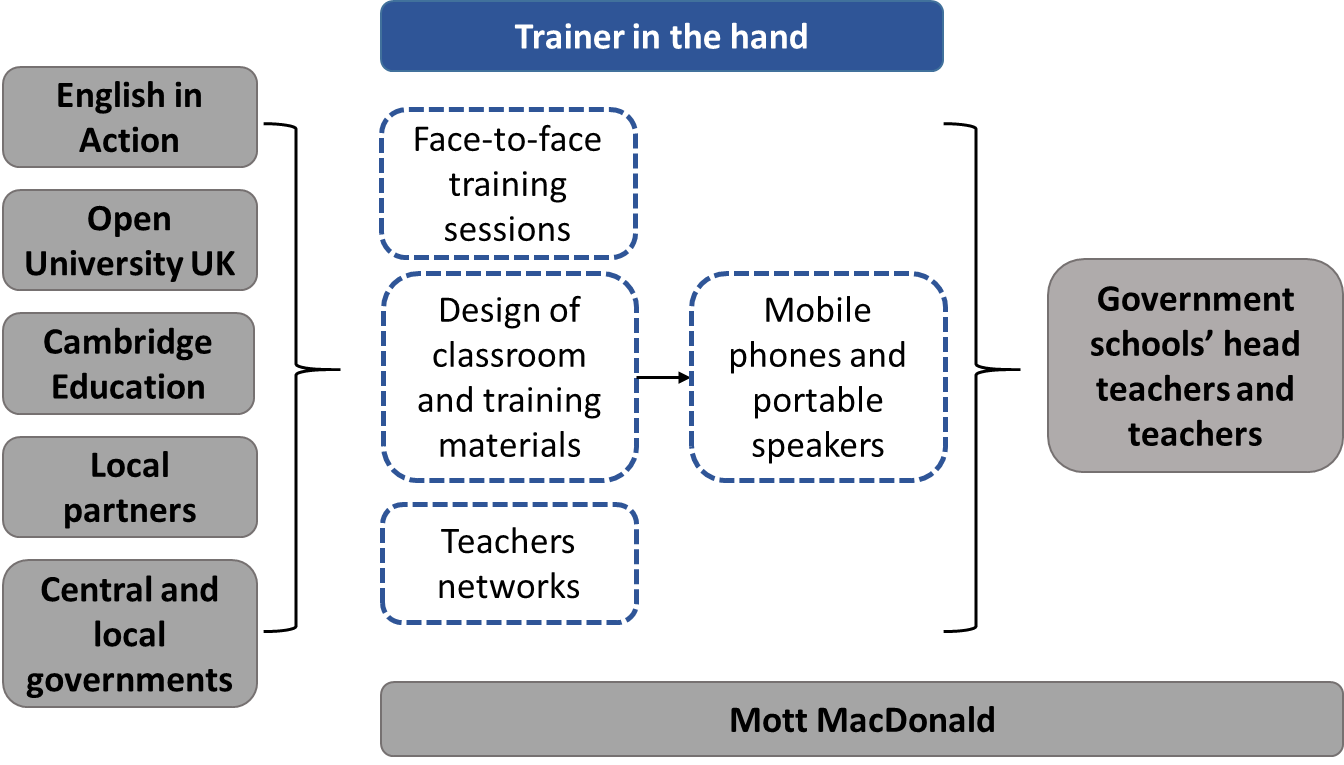
The Primary Teaching Learning Program is a 10-year program funded by DFID (the United Kingdom's Department for International Development), implemented by EiA, and managed by Mott MacDonald. Two international partners—Cambridge Education (a member of the Mott MacDonald Group) and Open University UK—and two local partners are involved in the management and design of the project’s educational materials.

The central government—in the form of the Ministry of Primary and Mass Education and the Directorate of Primary Education—in addition to district- and subdistrict-level local governments also participate in the design of the educational materials; they are also involved in the implementation and monitoring of the program. As such, school visits and workshops are organized in coordination with government officials so they can share their ideas. EiA staff report to local and central governments regarding the program’s progress and challenges.

The program includes strong accountability measures. Government officials linked to the project can provide feedback during quarterly workshops organized in coordination with EiA at the local level. Teachers provide feedback by submitting a form with their opinions and concerns to EiA; they also participate in in-person feedback discussions during training sessions. EiA has a research and monitoring and evaluation unit that conducts regular school visits and asks head teachers and teachers to provide feedback that can be incorporated into the program to improve it accordingly. There are no direct feedback mechanisms for parents and students, but EiA and Open University UK have conducted several large studies on student perceptions; and EiA partner schools usually host a school management committee and parent-teacher association, which promote dialogue between the school, the parents, and the community.

**Figure 3.7. Primary Teaching Learning Program and the Trainer-in-the-Hand Approach: Governance Structure**

|  |
| --- |
| Figure 3.8. Trainer in the Hand: Access to Training Materials on Inexpensive Nokia Phones |
| C:\Users\Flora\AppData\Local\Microsoft\Windows\INetCacheContent.Word\EiA.JPG |



1. *Financial structure*

The model does not involve financial flows between actors, but schools receive teaching materials and the associated technology support.

The overall cost of implementing the program includes:

* The design of educational materials;
* Information and communication technology (ICT) support: an inexpensive phone (around US$70 in Bangladesh) and a portable loudspeaker (around US$8 in Bangladesh), which the participating teacher can keep after completing the training; and
* Five day-long, in-person training sessions at an estimated cost of US$225 per teacher, according to Sudeb Kumar Biswas, the head of the PTLP.

The EiA’s financial strategy evolved in three phases over the course of the program:

* **Pilot phase**, May 2008–April 2011. Educational materials were designed and the program was piloted at a few schools. Due to a lack of alternatives, EiA uses expensive iPod MP3 players to broadcast the audio and video.
* **Scale-up phase**, April 2011–March 2014. EiA extends the program to 30,000 teachers and shifts to inexpensive Nokia phones and rechargeable portable loudspeakers.
* **Sustainability and institutionalization phase**, April 2014–March 2018. While new schools and teachers continue to be incorporated into the program, EiA no longer distributes equipment—it only provides the secure digital cards containing the teaching materials. Teachers and/or schools are now responsible for procuring any needed technology. The change was instituted to increase the participation and ownership of schools over the program and to ensure that the government would take over the approach after the program ends, which was less likely if the program incurred costs that were significantly higher than the average training program in the country.

“The model is quite expensive compared to other training program in Bangladesh. Yet, schools are very motivated to be part of it, even if they have to purchase the materials at their own costs. In some cases, what we saw was that the community mobilized to purchase the necessary ICT equipment. This happened in schools not targeted by our programs, or in schools that were targeted later in the program, when EiA was not procuring the ICT equipment any longer.” (Interview with Bikash Chandra, head of the PTLP material development process, EiA)

1. *Clients and staff*

The PTLP targets government-run schools. Government officials conduct the selection process with the aim of ensuring diversity in terms of school type and geographic coverage. Schools are assessed against criteria to ensure the inclusion of low, middle, and high-performing schools in urban, semi-urban, and rural zones; and so that multiple schools are close enough to one another to facilitate networks formation. At the time of this writing, the PTLP had partnered with 30,000 primary and secondary teachers and plans to include 21,000 more.

1. *Assessment*

Table 3.15 assesses the trainer-in-the-hand approach against six criteria: quality, accessibility, accountability, cost-effectiveness, sustainability, and scalability. A traffic light system indicates how well the model scores against the criteria: green indicates a high score, yellow is neutral, and red indicates a weak performance.

Table 3.15. Trainer-in-the-Hand Approach: Assessment

|  |  |  |
| --- | --- | --- |
| Quality |  | The Primary Teaching Learning Program (PTLP) directly improves teaching quality by introducing more interactive classroom materials and by facilitating year-long teacher trainings. Monitoring and evaluation assessments demonstrate improvements resulting from the project. |
| Accessibility |  | The mobile-based dissemination approach increases access to classroom and training materials across rural and urban schools, high- and low-performing schools, and stable and conflict environments. |
| Accountability |  | The existing model has in place several accountability mechanisms that target government officials, participating teachers, and students with dedicated perception surveys. |
| Cost-Effectiveness |  | The program requires ICT equipment for every teacher, but inexpensive mobile phones and loudspeakers are sufficient to access and share the materials. Since 2015, schools have been using their own resources to procure the equipment. |
| Sustainability |  | Central and local governments have participated in the program since its inception, and program activities have been embedded in them since the final phase of the project. |
| Scalability |  | Once the teaching materials are designed, additional funding allows for an easy expansion of the program to diverse schools and areas. The program is easily replicable to other subjects, such as math and science in Nigeria. |

* **Potential for Replication in South Sudan**

The main challenge to the trainer-in-the-hand model’s replication in South Sudan lies in the country’s overall weak economic situation. Some schools might be able to purchase equipment, but this would certainly not be true universally, which could worsen inequality levels between poorer and wealthier facilities. Therefore, the needed technology should be distributed to all the schools in the country, and yet this could undermine ownership and commitment to the program and threaten the sustainability of the approach if the government cannot afford to assume the costs after the program’s completion. If extra resources are distributed to some schools and not others, communication with nonbeneficiaries explaining the reasons that their schools were not chosen will be crucial.

The model presents key opportunities for implementation in South Sudan. First, its capacity to continuously bring educational materials to teachers in conflict-affected areas suits the highly insecure environment, where conflict and displacement regularly disrupt schools and training programs. Second, it takes a practical approach: training materials are based on videos that depict concrete classroom situations that teachers can easily identify with and then replicate.

**Challenges created by insecurity and frequent population movements.** The trainer-in-the-hand approach is well adapted to insecure environments characterized by frequent population movements because it allows students and teachers flexibility in terms of accessing resources through mobile phones. While the risk of theft cannot be completely avoided, the inexpensive ICT equipment can be replaced easily.

**Challenges created by the unstable economic environment.** The approach requires every targeted teacher to have one suitable mobile phone and one portable loudspeaker. Given the economic context of South Sudan, it is unlikely that all teachers would possess adequate equipment or that all schools would have sufficient funds to purchase it. As was the case during the second phase of the project in Bangladesh, the distribution of equipment would be a necessary part of the model in order to avoid reinforcing inequalities between wealthier and poorer schools. To mitigate the risks driven by technology distribution, the model’s implementer would need to interact closely with teachers and school leadership to promote ownership and incorporate a comprehensive exit strategy.

**Challenges created by the scarcity of technical and managerial skills.** The training program is focused on improving technical skills through audio and video recordings, examples, and practical advice. Nevertheless, given the exceptionally challenging nature of working in South Sudan, replication of the program may require more training sessions at a higher frequency to ensure productive program adoption and to secure the commitment of participants.

**Potential for inclusion of central and local governments.** Both local and national governments are integrated into the program in Bangladesh. Similarly, there is significant potential in South Sudan to include central and local institutions. At the central level, the Ministry of Education, Science, and Technology could contribute to the design of the educational materials and verify its alignment with the national curriculum. Local governments could support the school selection process and the implementation of activities intended to raise community awareness. Local government could also be involved in monitoring by accompanying facilitator teachers on school visits. Finally, the model’s a replication in South Sudan should incorporate effective feedback mechanisms to maintain government engagement.

**Potential for aggravating community tensions.** There is a risk of generating conflict by omitting certain schools from the project—an unavoidable feature of many development projects—which would need to be mitigated through community engagement and transparent implementation. The project’s implementation should be open and inclusive, for example by offering nonbeneficiary schools access to the secure digital cards that contain the training materials, if not the full technological support.

* **SWOT analysis**

Table 3.16 summarizes the main strengths and weaknesses of the trainer-in-the-hand approach as well as the major threats and opportunities linked with its potential implementation in South Sudan.

Table 3.16. Trainer-in-the-Hand Approach: SWOT Analysis

|  |  |
| --- | --- |
| Strengths | Weaknesses |
| * Improves teaching quality through continuous and practical training. * Strengthens the participation of children through interactive activities (audios and videos). * Facilitates access to training materials by teachers. * Enhances accountability—the model includes direct, regular feedback mechanisms and student perceptions studies. * Utilizes inexpensive ICT equipment that belongs to the teachers at the end of the program, which makes it cost effective. * Embedded into central and local governments, which means it is sustainable. * Easily scalable to other schools and to subjects other than English. | * The approach is more expensive than the average training program in Bangladesh. * The school selection process could create tensions between beneficiaries and nonbeneficiaries. * ICT equipment is only distributed during the two first phases of the program, which can create misunderstanding and discontentment. * The approach relies on teachers being committed to the training. |
| Opportunities | **Threats** |
| * Teaching quality is on average very low. * Teacher training is often ineffective. * In low performing schools, some teachers are still only certified in Arabic and not in English, which they struggle to fully understand. * The materials are designed in a way that takes into account the overall poor teaching skills. * Teachers who are displaced or affected by conflict would be able to continue accessing training materials. | * The low level of teacher competency and financial incentives could undermine their motivation to follow a near-autonomous one-year training. * The national curriculum is weak in terms of content and vocabulary— a prior revision may be necessary to create valuable training materials. * Teachers across the country could need the training materials in several languages. * Head teachers and teachers could be reticent to change their teaching practices. |

* **Potential for World Bank/Donor support**

Due to local constraints and a protracted history of underdevelopment, teacher training in South Sudan is expensive and time-consuming—yet it is very much needed. The EiA trainer-in-the-hand approach offers complementary training that could, in combination with other initiatives, maintain continuity of professional development and reach large numbers of teachers in urban areas. Table 3.17 depicts how donors could support the implementation of a trainer-in-the-hand approach in South Sudan.

Table 3.17. Implementing the Trainer-in-the-Hand Approach in South Sudan:   
Potential Opportunities for World Bank/Donor Support

|  |  |
| --- | --- |
| Financial | Technical |
| * Provide ICT equipment—mobile phones and portable speakers. * Hire trainers to implement the in-person training sessions (five days per year or more, depending on assessed needs). * Hire community mobilizers to conduct awareness-raising campaigns. | * Design the classroom as well as the training audio and video materials, in accordance with the national curriculum. * Conduct gap assessments and training of trainers. * Conduct in-person teacher training sessions. * Implement teachers network and monitor peer support. * Conduct gap assessments and training of community mobilizers. * Regularly monitor and evaluate teacher and student opinions and learning outcomes. |

### Eneza Education Mobile phone platform, Kenya

1. **Description**
2. *How does it work?*

Eneza Education, an organization founded by Kenyan teachers, aims to utilize SMS technology to improve student learning and provide quality educational resources to remote schools in Kenya. Students use their mobile phones as a study tool to take quizzes based on the national curriculum. Depending on their answers, students receive appropriate feedback, tips, and mini-lessons. The education content aligns with the country’s national curriculum and includes math, science, Kiswahili, and English. Teachers can track the performance of students because the data from the mobile phones are collected and fed back into a central location accessible to teachers and parents. This data can then be used to assist parents and teachers in identifying a student’s strengths and weaknesses, enabling them to provide additional support where needed. Schools are also able to access countrywide data of students' scores from other schools. Finally, students can access tutorials, tips, and assessments, as well as a leader board, Wikipedia text, and live teacher chat through Unstructured Supplementary Service Data (USSD)/SMS, an online web app, an offline desktop app, and an Android app.

Eneza developed Android and web-based versions of the app, but users access courses and quizzes almost exclusively through text messaging for KSh[[11]](#footnote-11) 10 Kenyan shillings (KSh)—or approximately US$0.10 per week, deducted from prepaid airtime on their mobile phones.

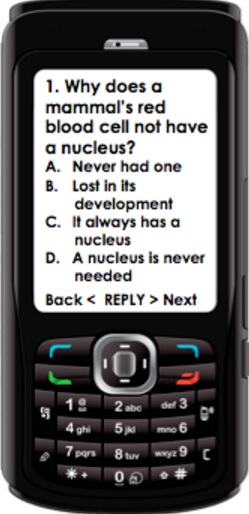


Figure 3.9.   
Eneza Education’s   
Quiz Received on an Inexpensive Mobile Phone

1. *Governance and institutional structure*

Eneza Education is a for-profit, social enterprise based in Kenya with a team of 15 full-time staff and 40 contracted master teachers. The level of engagement with the government is low. The central government (Ministry of Education) was consulted to approve the educational content designed by Eneza’s teachers; local governments are not involved in the model.

Eneza runs a customer care service call center that users can reach through a standard paying call to offer their comments, concerns, or complaints. According to Anita Kanndo, a customer care supervisor at Eneza “We, at Eneza, then check the feedback to verify it and see if we can adjust the program accordingly.”

In 2016, Eneza established a partnership with Safaricom, the largest telecommunications company in the country. It has already implemented its program in Tanzania and Ghana, and its mission is to reach 50 million children across rural Africa.

Their key partnerships in East Africa include:

* IDP Foundation, which partnered with Eneza in Ghana to pilot the education content in 10 schools from January to June 2016. The plan is to expand the model in Ghana from 2017 onward;
* Shule Direct, which implemented a similar model in Tanzania—SMS Makini—in partnership with the telecommunications company Tigo;
* Kenya Primary School Heads Association—KEPSHA—an organization representing over 26,000 primary school head teachers, which partnered with Eneza to provide mobile learning to teachers on classroom and staff management as well as general school management systems;
* Equity Group Foundation, which partnered with Eneza to create high-quality, specialized secondary education content in Kenya; and
* Xavier Project, which is focused on increasing educational achievement among refugees in East Africa primarily through the use of ICT and has collaborated with Eneza since 2015 to train community leaders on the SMS platform and distribute the product to 1,000 users in Dadaab Refugee Camp for free.

1. *Financial structure*

Eneza is a for-profit social enterprise based on the large-scale development of an inexpensive product. As of September 2016, it had earned US$90,000 in income over the previous 12 months. It had previously raised US$900,000 (as of September 2015), through a mix of convertible debt, equity, grants, and competition prizes (Mulupi 2015).

1. *Clients and staff*

In August 2016, Eneza Education reached over 1 million users across Kenya. End users are Kenyan primary students in the upper primary grades (grades 5–8). These students take a test at the end of eighth grade that determines whether or not they continue on to secondary school. Parents and school principals usually represent the paying customers.

1. *Assessment*

Table 3.18 assesses Eneza’s model against six criteria: quality, accessibility, accountability, cost-effectiveness, sustainability, and scalability. A traffic light system indicates how well the model scores against the criteria: green indicates a high score, yellow is neutral, and red indicates a weak performance.

Table 3.18. Assessment of Eneza Education’s Education Model

|  |  |  |
| --- | --- | --- |
| Quality |  | The model improves quality of learning by offering high-quality content and because it can be used to access additional learning materials or to support out-of-school children to follow the curriculum. The platform also tracks and assesses the progress of students and schools. |
| Accessibility |  | Access is reinforced in terms of both geographic coverage and affordability. Students who cannot afford textbooks or who live in remote or conflict-affected areas can access inexpensive teaching materials through SMS using their mobile phones. |
| Accountability |  | Eneza Education runs a customer care service call center that users can reach through a standard paying call to register their comments, concerns, or complaints. |
| Cost-Effectiveness |  | The model is based on large-scale (one million users in 2016), inexpensive (US$.010 per week) education services accessed through mobile phones. |
| Sustainability |  | Eneza Education operates as a social business model, with a low level of engagement with the public administration. It included the National Ministry of Education, Science, and Technology in Kenya through a consultative process on the educational materials, which were designed by Eneza’s teachers. The platform does not partner with local governments. |
| Scalability |  | The model is easily scalable once country-specific resources have been developed. Partnerships with mobile phone operators are available in most targeted countries. |

1. **Potential for Replication in South Sudan**

Implementing Eneza Education’s model in South Sudan would involve two main challenges. First, even though the education service is inexpensive, relying on low-cost mobiles phones, South Sudan’s overall weak purchasing power could create a barrier to accessing the service. Further, there may be scant availability of any kind of mobile phone, and parents may not consider paying for the service to be a priority, especially in times of economic crisis and conflict, and particularly if they are already paying tuition fees. This could lead to a widening of the already existing gap between students and schools that are poorer or better off. Second, the model does not build up government accountability for delivering quality education services. The potential for cooperating with the central government exists, but there is little room for engaging with local governments.

Beyond contextual constraints, the accessibility of Eneza Education’s model gives it a key advantage. South Sudan suffers from frequent forced displacements and conflicts, which disrupt schooling. The platform enables students to continue following the national curriculum no matter where they are—to the extent that they can access mobile coverage. Eneza inked several partnerships targeting students in conflict-affected areas, such as Garissa and the Dadaab refugee camp.

**Challenges created by insecurity and frequent population movements.** Eneza’s approach represents an interesting opportunity for maintaining continuation in learning among internally displaced children and adult learners in South Sudan. Internal displacement affects urban and rural populations alike, as exemplified by regular forced population movements in Rumbek, Wau, and Yei in 2016, and the Eneza approach would therefore benefit students in these urban areas. In Kenya, Eneza’s model is used in conflict-affected areas such as Garissa and the Dadaab refugee camp. Extreme levels of conflict, however, would restrict access to the platform, not unlike most other services.

**Challenges created by the scarcity of technical and managerial skills.** The assessed risk is low. Eneza’s model is user-friendly: most customers use simple SMS to receive and respond to lessons and quizzes. Depending on their answers, the platform automatically sends tips and lesson summaries. There is also “gamification” built into the app: it features a built-in detective game that sends clues as learners make progress. The platform systematically tracks and assesses the learning outcomes of the student. Although the design of the platform seems adaptable, the overall quality of the South Sudan national curriculum on which the materials would be based, could constrain the quality and the usefulness of the platform.

**Challenges created by weak and fluctuating purchasing power among end users.** Eneza’s service is low-cost, relying primarily on inexpensive mobile phones, but unlike Kenya, where 88 percent of the population owns a mobile phone (Communications Authority of Kenya 2015), South Sudan’s rate of ownership ranks among the lowest in Africa, with an estimated rate of 23 percent in 2016.[[12]](#footnote-12) Disparities related to mobile phone access could reinforce inequality of access to educational materials. Even if the students can access mobile phones, education may not be perceived as a priority-spending item in South Sudan, particularly during times of conflict and economic crisis, and especially if parents are already paying for school. Accessing electricity to recharge the phone may also be viewed as a low-priority additional expense.[[13]](#footnote-13) The situation creates a business risk to the implementation of Eneza Education’s model in South Sudan because the financial viability of the model is based on the large-scale expansion of an inexpensive product.

**Potential for aggravating community tensions.** Better-resourced schools and students are more likely to access Eneza’s services than disadvantaged ones, creating the risk of widening socioeconomic inequalities, which could trigger community tensions because poorer schools and families already being left behind in terms of access to teaching materials. One option is to subsidize the purchase of mobile phones and platform fees for poorer families, conditioned on their subscription to Eneza’s services.

**Potential for inclusion of central and local governments.** Eneza’s collaboration with the public administration of Kenya is limited to the central government approving educational content. This involvement could potentially be enlarged in South Sudan. National government entities such as the Ministry of Education, Science, and Technology could participate in the design of the educational materials as well as in the monitoring of data collected through the platform that tracks the performance of students and schools. This could then inform future evidence-based education programs.

1. **SWOT analysis**

Table 3.19 summarizes the main strengths and weaknesses of Eneza Education’s model and the major threats and opportunities linked with its potential implementation in South Sudan.

Table 3.19. Eneza Education’s Model: SWOT Analysis

|  |  |
| --- | --- |
| Strengths | Weaknesses |
| * Quality—Improved learning outcomes. * Increased geographic and economic access—Eneza Education’s model relies on SMS and inexpensive mobile phones, which enables it to target the poor. * Accountability—users can call a customer care service center to offer feedback. * Cost-effectiveness—The viability of Eneza’s approach lays in its ability to deliver an inexpensive service at a very large scale. * Scalability—Eneza’s model is easily scalable within a country or to other countries. * Data collection—Eneza tracks and assesses the learning outcomes of schools and students. * Gamification— the platform links learning and entertainment. | * Sustainability—The level of engagement of the central and local governments is low. |
| Opportunities | **Threats** |
| * Poorer schools cannot afford sufficient teaching materials for all students. * Poorer parents cannot afford school fees or teaching materials for their children. * Frequent population movements and conflicts disrupt access to school and teaching materials, which leads to students dropping out early. * Lack of a large-scale national test allowing for the tracking of student and school performance. * Eneza’s platform is user-friendly and adapted to the overall low level of technical skills. | * Could widen the gap between wealthier families who own a mobile phone and can afford Eneza’s services and access to electricity and poorer students, who are usually enrolled in low-performing schools. * Poor quality of the national curriculum in terms of content and vocabulary on which the content should be based. * Instability of mobile phone network could restrict access to the program; * Weak purchasing power—education may not be seen as a priority, especially in times of crisis and if parents are already paying tuition fees. |

1. **Potential for World Bank/Donor support**

On key identified challenge is the difficulty of accessing educational materials in South Sudan. Some schools, even though supported by the Girls Education South Sudan program, still cannot afford sufficient textbooks. Some students struggle to attend school regularly or drop out early due to conflict or forced displacement, or because they have to work to help their families. Eneza Education’s approach facilitates access to teaching materials and quality learning outcomes through an inexpensive education service, making it a suitable model in the South Sudan context. There is a great potential for donors to provide technical and financial support for implementation (table 3.20) of a similar model in South Sudan.

Table 3.20. World Bank/Donor Potential Support to the Implementation of Eneza Education’s Model in South Sudan

|  |  |
| --- | --- |
| Financial | Technical |
| * Subsidize inexpensive phones and access to the platform for poorer families. * Hire community mobilizers. | * Design of educational content in collaboration with the Ministry of Education, Science, and Technology. * Education data analysis in collaboration with the Ministry of Education, Science, and Technology. * Training of community mobilizers and organization of events to raise awareness about Eneza’s model. |

Appendixes

## Appendix A. List of preselected cases

### Utilities

Water:

* Manobi—mWater platform, Senegal
* CityTaps—smart and prepaid water meters, Niger
* K-Rep Bank—microfinancing for community-based water systems, Kenya

Electricity:

* Lumos—pay-as-you-go solar home system, Nigeria
* E4D—community-based cooperative and solar photovoltaic-driven mini-grid, Kenya

### Health

* Child and Family Wellness (CFW)—franchise health model, Kenya
* Kisumu Medical and Educational Trust (KMET)—network of private physicians, Kenya
* Community Health Education and Social Services (CHESS)—community-event based surveillance, Liberia

### Education

* Eneza Education—mobile phone platform, Kenya
* English in Action’s (EiA)—*trainer-in-the-hand* approach, Kenya
* African Revival—Learning and Earning through School Gardens Model, Uganda

## Appendix B. Selection Criteria Table

Table B.1. Water

|  |  |  |  |
| --- | --- | --- | --- |
|  | Manobi—mWater Platform, Senegal | K-Rep Bank—Microfinancing for  Community-based Water Systems, Kenya | CityTaps— Smart and Prepaid Water Meters, Niger |
| Quality | The model does not affect water quality, but it enables better monitoring and maintenance of the network, which ultimately improves the quality of water delivery. | Depending on the type of microloans, financing private business opportunities could improve quality of the water network (infrastructure and safeness for drinking). | Water delivery quality is improved by facilitating access to piped water for end users. Poor urban households who used to fetch water save valuable time, and the water provenance and therefore its quality are ensured. |
| Accessibility | The platform results in more effective maintenance of the water network: breakdowns are rapidly documented and fixed, and the data creates evidence-based recommendations regarding the need for water network expansion. | Depending on the type of microloans, financing private business opportunities could improve geographic or economic access. | Access is strengthened in both economic and geographic terms. The risk-return profile for water providers is improved, making the expansion of the water grid less risky. Water users arebetter able to control their expenses by making prepayments of any value at any time. |
| Accountability | End users can report breakdowns or leaks using simple Short Message Service (SMS). | The bank is not accountable for the impact that financed business opportunities has on end users. | The research team did not obtain information on the existence of feedback mechanisms for end users. Yet the establishment of prepayment for access to a service usually increases calls for accountability by end users. |
| Cost-effectiveness | The mWater platform requires significant financial (ICT equipment and human resources) resources and investment. However, resources are efficiently allocated as the data collected are effectively processed and analyzed. Through the web platform, water providers are also able to monitor every water point (consumption versus cost recovery) then and make evidence-based decisions. | Financed projects are for-profit and private enterprises. Interest rates follow the market. borrowers carefully monitor cost-effectiveness. | Water providers increase their income by eliminating the costs of billing and customer default. Water users can control their water expenses and only pay for the water they consume. |
| Sustainability | The platform was piloted through a public-private partnership between PEPAM—the Senegalese government’s Water and Sanitation Program for the Millennium Development Goals—and Manobi. It is managed in partnership with the Senegalese Water Ministry’s Directorate of Operation and Maintenance (WSP 2010). | Microfinancing will push borrowers’ accountability, but the space for including the government is limited. | The model does not involve government in Niamey; it was piloted through Société d’Exploitation des Eaux du Niger, a private company in charge of operating the Nigerian public water grid. |
| Scalability | There is great potential to develop the model within a single water network, adding data and improving the analysis. There is also strong potential to replicate the model to any water network because it builds on existing networks. | Thepotential of expanding the model may be high, depending on the availability of sound business opportunities to finance. | The model aims at expanding the water grid within one area; it is therefore easily scalable. This is also the case regarding replication to other existing water grids because the only infrastructure needed would be smart metering and the existence of mobile money. |

Table B.2. Electricity

|  |  |  |
| --- | --- | --- |
|  | Lumos’ Pay-as-you-go Solar Home Systems, Nigeria | E4D Community-based Cooperative and Solar Photovoltaic-Driven Mini-grid, Kenya |
| Quality | Lumos provides inexpensive and clean energy. The system comes with a five-year warranty that includes repairs. Customers can also rely on call centers for any maintenance needed. The objective is to provide distance maintenance whenever possible, which is why the system is based on a smart interface that checks automatically if it is running properly. | This model provides cheap and clean energy to off-grid businesses and households within a delimited area. The local cooperative operates and maintains the solar plant, creating employment and providing economic revenue and social benefits. |
| Accessibility | Access is improved in terms of geographic coverage—target customers are off the grid—and affordability—Lumos reduces the need for on-site maintenance, driving energy costs down and enabling poor households to purchase their own individual solar system through the lease-to-own scheme. | Geographic access is expanded because off-grid populations can access energy, and solar energy is very cost-effective. |
| Accountability | End users can rely on call centers and service shops for any repairs or maintenance needed on the solar home system. | The team was unable to gather information regarding the existence of accountability mechanisms that would allow end users to provide feedback. |
| Cost-effectiveness | The pay-as-you-go system allows customers to control their expenses and to own the solar home system once the equipment cost is covered. The model includes the provision of two light-emitting diode (LED) lamps to ensure efficient energy use and spending. | Significant initial capital expenditures are necessary to build the solar plant, but the cooperative is financially viable via membership fees and local electricity sales. The generated income also provides microfinancing for the community and contributes to capital cost recovery. |
| Sustainability | The system does not involve central or local government and does not help build up their accountability in terms of delivering electricity. | While the model builds the accountability of the cooperative members, the government is not involved. |
| Scalability | The model is easily scalable within an area because no infrastructure is needed other than mobile phone coverage. Additional funding would enable the model to be easily extended to other countries; it would involve building up call centers and service shops on the ground. | The model has a modular design, making it easy to replicate and resize to suit villages of various sizes and energy requirement. |

Table B.3. Basic Health Care

|  |  |  |  |
| --- | --- | --- | --- |
|  | KMET Network of Private Physicians, Kenya | CFW Franchising Health Model, Kenya | CHESS Community-event Based Surveillance, Liberia |
| Quality | Quality requirements for private clinics to enter the network include registration, staff qualifications, and attendance at the trainings organized by the national Ministry of Health. The performance of member clinics is evaluated on a monthly basis in terms of number of patients and satisfaction levels. | The model creates incentives for franchises to consistently deliver the high-quality care required by the standard. This is possible through the franchise operating system, distributed to all franchises, and through the implementation of a strict compliance program. | The model does not directly improve the quality of the health care services, but it does enable early detection of certain disease, allowing for the timely implementation of national health measures, which ultimately impacts the quality of health care delivery. |
| Accessibility | The network does not strictly control prices, but it does supervise them. It does not increase the number of private clinics—it franchises existing ones. | The franchise model improves the geographic coverage of health services (clinics and pharmacies) by fostering conditions that enable creation of new high-quality health facilities. The model further improves basic health care accessibility by delivering primary care at an affordable price and by supporting the most vulnerable with free health care. | The model does not improve the coverage or affordability of health services. |
| Accountability | Feedback mechanisms are not mandatory but are included in the network’s best practices, and patient satisfaction rates are monitored monthly. | Franchises are held accountable by a franchisor that regularly checks on their compliance. Accountability can therefore be described as strong because the facilities risk their revocation from the franchise. The model also includes a record-keeping regime that compiles patient records and vital health statistics as well as financial performance statistics for each franchise. However, there are no direct feedback mechanisms for end users to raise their doubts or concerns. | The community can provide feedback due to abiweekly radio program linked to the project. Input is collected and taken into account by government institutions. |
| Cost-effectiveness | Resources are efficiently allocated—no money is disbursed to the clinics and only transport and accommodations linked with trainings and meetings are reimbursed. | The financial investment per franchise is significant: the cost to establish, equip, and prepare a clinic to operate at the effective quality care standard is approximately US$5,000. However, once the franchise has been set up, it can deliver high-quality and affordable care thanks to the centralized procurement process that drives down drug costs. | The model is very cost-effective because it consists only of hiring and training general community health volunteers and because the early detection of diseases enables more efficient allocation of resources. |
| Sustainability | The network is co-managed by the national-level Ministry of Health, enhancing its knowledge of and accountability for private health providers. | The model is based on a commercial franchise system and does not involve the government. | The model involves local and national government institutions, which are in charge of collecting and transmitting the information collected by the general community health volunteers. |
| Scalability | The network is designed and plans to grow over the coming years. The scalability potential is strong because no significant financial or capital expenditures are needed. | The model is easily scalable because additional funding to the franchisor could be used to increase the number of franchises. An implementation strategy focused on expansion might lead to a loss of business and to closures among older facilities that do not meet the standards and that are not part of the network, potentially creating community tensions. | There is strongpotential to increase surveillance and the model’s impact in one area by expanding the geographic coverage and increasing the training for the general community health volunteers. The potential for replication in other areas is strong because the model is highly adaptable and does not rely on heavy infrastructure. |

CFW = Child and Family Wellness; CHESS = Community Health Education and Social Services; KMET = Kisumu Medical and Educational Trust.

Table B.4. Primary Education

|  | EiA’s Trainer in the Hand” Model, Kenya | Eneza Education’s Mobile Phone Platform, Kenya | African Revival Learning and Earning through School Gardens Model, Uganda |
| --- | --- | --- | --- |
| Quality | The objective of the Primary Teaching Learning Program is to improve teaching quality. The program includes the introduction of interactive classroom materials, particularly audio and video. Teachers benefit from year-long training to change practices in a durable manner; they are also supported through regular in-person training sessions. In Bangladesh, monitoring and evaluation assessments throughout the program have demonstrated enhanced student participation and an increase of the use of English in the classroom. | The model builds up student learning by offering high-quality education content. It can be used to access additional learning materials or to support out-of-school children (displaced or working) to follow the curriculum. The platform also tracks and assesses the progress of students and schools. | The model does not directly impact teaching quality but it enhances parental involvement, which reflects in children’s learning outcomes and school management. |
| Accessibility | The easy-dissemination approach leads to an increased access to classroom and training materials in rural and urban areas, peaceful and in-conflict zones, and high- or poor-performing schools. Geographic access is expanded. | Access is reinforced, both in terms of geographic coverage and affordability. Students who cannot afford textbooks or who live in remote or areas affected by conflict can access inexpensive teaching materials through SMS using their mobile phones. In 2015, 88 percent of the Kenyan population possessed a mobile phone (Communications Authority of Kenya 2015), which enabled Eneza Education to target the poor. | The model does not affect the geographic coverage or affordability of primary education. |
| Accountability | The existing model has several accountability mechanisms in place, including government officials, teachers, head teachers, parents, and students, detailed in the main section. | The model includes a customer call center that users can call (normal paying call) [[meaning? Delete?]] to register comments, concerns, and complaints. According to Aniva Kanndo, a customer care supervisor with Eneza,“We, at Eneza, then check the feedback to verify it and see if we can adjust the program accordingly.” | Enhanced involvement and presence of parents at the school increases their commitment and feedback through existing mechanisms, such as parent- teacher associations and schools management committees). |
| Cost-effectiveness | The program requires ICT equipment for all teachers, but inexpensive mobile phones and loudspeakers are sufficient for reading the materials. Since 2015, schools use their own resources to procure equipment, indicating that the investment is worthwhile. After the completion of the year-long training cycle, teachers own the ICT equipment and can continue using the teaching materials. | The model is based on large-scale (one million users in 2016), inexpensive (US$0.10 per week) education services accessed through mobile phones. | Cost-effectiveness is high, with an efficient resources allocation.At the point of harvest, 30 percent of income is returned to the project to buy new crops, 30 percent is donated to the school and 40 percent is returned to the individuals. |
| Sustainability | According to Sudeb Kumar Biswas, head of EiA‘s Primary Teaching Learning Program, “The government involvement is key for the sustainability of the program.” Central and local governments have been incorporated into the program since its inception, from the design of educational materials to implementation and monitoring. EiA included its training activities in government training programs and made all of the materials accessible from a government website. This was accomplished during the sustainability and institutionalization phase, which aims at embedding the Primary Teaching Learning Program within government to ensure its long-term sustainability. | Eneza Education operates as a social business model; the public administration demonstrates a low level of engagement. In Kenya, Eneza included the National Ministry of Education, Science, and Technology through a consultative process regarding the educational materials, which were designed by Eneza’s teachers. The platform does not engage in partnerships with local governments. | While the model improves parents’ commitment and accountability, the government is not included. |
| Scalability | The Primary Teaching Learning Program is a 10-year program that started in 2008. At the time of this writing, it partnered with 30,000 primary and secondary teachers and planned to include 21,000 additional teachers. After the teaching materials are designed, additional funding allows for an easy expansion of the program to diverse areas and schools. In addition, the original program focuses on English, but it is easily applied to other subjects. For example, when the model was replicated in Nigeria, it was extended to math and sciences. | Strong potential to develop the model to other subjects and new materials within a single country to the extent that students can absorb the material. In Kenya, Eneza developed content for adult learning and is in the process of developing higher-education teaching materials. The potential to develop the model to other countries is enormous. Eneza’s approach is already being implemented in Tanzania and Ghana, with a mission to reach 50 million children across rural Africa. | Strongpotential to develop the model with additional funding: the number of gardens and of parents involved could be easily increased; the only requirement is the availability of a land. |

EiA = Education in Action.

## Appendix C. List of key informant interviews

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Date | Sector | Name | Contact | Employer | Position | ASD model studied | Country of implementation |
| 09/06/16 | Water | Daniel Annerose | [daniel.annerose@manobi.net](mailto:daniel.annerose@manobi.net) | Manobi | Chief executive officer | mWater platform | Senegal |
| 09/15/16 | Helene Smertnik | [hsmertnik@gsma.com](mailto:hsmertnik@gsma.com) | Global System Mobile Association (GSMA) | Market engagement and insights manager | mWater platform | Senegal |
| Salima Fazal Karim | [SFazalkarim@gsma.com](mailto:SFazalkarim@gsma.com) | Market engagement manager |
| 09/07/16 | Electricity | Nate Heller | [nheller@peg-ghana.com](mailto:nheller@peg-ghana.com) | Persistent Energy Ghana (PEG) | Chief operating officer | Pay-as-you-go solar home systems | Ghana |
| 09/05/16 | Health | Sam Owoko | [samowoko@kmet.co.ke](mailto:samowoko@kmet.co.ke) | Kisumu Medical and Educational Trust (K-MET) | Program manager | Network of private clinics | Kenya |
| 09/10/16 | Daniel Gboe | [chesslib2004adm@gmail.com](mailto:chesslib2004adm@gmail.com) | Community Health Education and Social Services (CHESS) | Program manager | Community-based event surveillance | Liberia |
| 09/19/16 | Scott D. Hillstrom | [scott.hillstrom@me.com](mailto:scott.hillstrom@me.com) | HealthStore Foundation | Chairman and cofounder | Franchising health model | Kenya |
| 09/06/16 | Education | Andres Sanchez | [andres.sanchez@nrc.no](mailto:andres.sanchez@nrc.no) | NRC—Alternative Education Work Group | Education specialist | Potential innovative alternative service delivery models in primary education | N/A |
| 09/22/16 | Sudeb Kumas Biswas | [sk.biswas@eiabd.com](mailto:sk.biswas@eiabd.com) | English in Action (EiA) | Head of the Primary Teaching Learning Program (PTLP) | Trainer-in-the-hand approach | Bangladesh |
| Bikash Chandra | [bikash.sarkar@eiabd.com](mailto:bikash.sarkar@eiabd.com) | Head of PTLP material development process |
| 09/27/16 | Aniva Kanndo | Phone: +254 707 908 308 | Eneza Education | Customer care supervisor | Mobile phone platform | Kenya |

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1. See https://www.wsp.org/sites/wsp.org/files/publications/Eng\_mWater%20Field%20Note.pdf. [↑](#footnote-ref-1)
2. See https://www.wsp.org/sites/wsp.org/files/publications/Eng\_mWater%20Field%20Note.pdf. [↑](#footnote-ref-2)
3. SWOT is an acronym for *strengths, weaknesses, opportunities, and threats*. [↑](#footnote-ref-3)
4. According to the World Bank, electric power consumption in South Sudan was 39 kilowatt hour (Kwh) per capita per year in 2013. For comparison, the average for Sub-Saharan Africa was 488 Kwh. See http://data.worldbank.org/indicator/EG.USE.ELEC.KH.PC. [↑](#footnote-ref-4)
5. According to the 2015 Doing Business World Bank surveys (World Bank 2015), electricity in South Sudan cost US$0.54/Kwh. For comparison, the price was US$0.22/Kwh in Kenya. [↑](#footnote-ref-5)
6. Lumos is registered as Txtlight Power Solutions Ltd., but does business as *Nova Lumos* or *Lumos*. [↑](#footnote-ref-6)
7. The price varies depending on the country of implementation. [↑](#footnote-ref-7)
8. The *franchise operating system* is owned and designed by the HealthStore Foundation. [↑](#footnote-ref-8)
9. Community leaders make decisions about who should access free health care based on vulnerability criteria. At the time of this writing, around 15 percent of patients in Kenya did not pay for the health care they received. [↑](#footnote-ref-9)
10. Most of the participating teachers use inexpensive Nokia 2610 style phones. [↑](#footnote-ref-10)
11. Kenyan shillings [↑](#footnote-ref-11)
12. <https://www.budde.com.au/Research/South-Sudan-Telecoms-Mobile-and-Broadband-Statistics-and-Analyses> [↑](#footnote-ref-12)
13. Among the 400 heads of household interviewed in Juba by Altai, June 15–27, , 66 percent claimed that they did not have access to electricity in their households. [↑](#footnote-ref-13)