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# Republic of South Sudan

## Alternative Service Delivery Options in South Sudan

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

October 29, 2017

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AFRICA



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

### **PART III: Synthesis Report**

*Water trucks in Juba, November 2012.*  
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## ABBREVIATIONS AND ACRONYMS

<b>BPHS</b>	Basic Package of Health Services
<b>CAIPA</b>	Crown Agents and International Procurement Agency
<b>DfID</b>	United Kingdom’s Department for International Development
<b>GESS</b>	Girls Education South Sudan
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (German Development Agency)
<b>GPS</b>	Global Positioning System
<b>HPF</b>	Health Pooled Fund
<b>£</b>	pound sterling
<b>MSF</b>	Médecins Sans Frontières
<b>NGO</b>	nongovernmental organization
<b>PHC</b>	Primary Health Care
<b>PTA</b>	parent-teacher association
<b>SMS</b>	Short Message Service
<b>SPLA</b>	Sudan People Liberation Army
<b>SPLA-IO</b>	Sudan People Liberation Army-in-Opposition
<b>SSEC</b>	South Sudan Electricity Corporation
<b>SSP</b>	South Sudanese pound
<b>SSUWC</b>	South Sudan Urban Water Corporation
<b>UNICEF</b>	United Nations Children's Fund
<b>UNOCHA</b>	United Nations Office for Coordination of Humanitarian Assistance
<b>US\$</b>	United States dollar
<b>USAID</b>	United States Agency for International Development
<b>WASH</b>	water, sanitation and hygiene

### **Currency conversion rates used throughout the report**

SSP 41 to US\$1 (June 2016)

SSP 80 SSP/US\$1 (December 2016)

## EXECUTIVE SUMMARY

This report is the last of the three-part series, *Opportunities for Improving Urban Service Delivery in South Sudan: A Tale of Two Cities*. Part I—*Service Delivery Status Report*—gives a general overview of the service delivery models currently operating the country. Part II—*International Case Studies* analyzes alternative service delivery models from other countries that are relevant to South Sudan. This study, Part III—*Synthesis Report*—builds on the first two. It investigates models of alternative service delivery in the context of urban South Sudan. Millions of people in the world’s newest country, in both urban and rural areas, depend on services delivered wholly or partly by nongovernment entities in this highly fragile, fluid, and often insecure environment that has been mired in conflict and economic challenges since gaining its independence six years ago. The objective of this research is to: (1) identify and analyze successful models of service delivery in three or four sectors in select urban areas of South Sudan that can be supported and replicated; (2) recommend relevant international examples of service delivery models that are appropriate to the South Sudanese context; and (3) identify the appropriate role of government in these alternative delivery models and the capacity building support required to fulfill the role. Across the various models identified, this study examines: (1) the cost and quality of services provided; (2) access to these services across different income, social, and ethnic groups, with a focus on the impact of the perception of safety and security; and (3) accountability relationships between government and end users and between service providers and end users.

While poor service delivery is a key issue throughout South Sudan, this study focuses on urban areas because the rapid and unplanned growth of urban settlements combined with a large influx of returnees, internally displaced persons, and economic migrants has put significant pressure on urban infrastructure and services. The concentration of returnees in urban areas since 2009, following the signing of the Comprehensive Peace Agreement, has resulted in overcrowding and greater pressure on already weak services, including sanitation, which increases the health burden and the risk of an outbreak of disease. Huge numbers of returning refugees and internally displaced persons are living in vulnerable urban settings, where insecurity and a lack of access to services and livelihood opportunities have further complicated the situation. Moreover, the national strategic response to accelerated urbanization has been weak, and international aid has been focused primarily on rural areas, essentially ignoring urban-based populations.

This report presents a detailed look at the role of alternative service delivery in primary education, basic health care, and urban utilities—water and electric—in the cities of Juba, the capital of South Sudan, and Aweil, a mid-sized city in the former state of Northern Bahr el-Ghazal close to the border with Sudan. While this represents a limited sample, together, these two cities are representative of South Sudan’s urban areas.

The authors of this study understand that the most recent relapse into armed conflict in the country following the events of July 2016 resulted in a complete shift toward humanitarian life-saving support. Under such circumstances, little space exists for policy discourse around long-term development solutions for the provisioning of basic services. However, this study does seek to describe the impact this conflict has on service provision and to suggest potential pathways toward more sustainable service delivery when the political and security conditions allow for it. This study draws on quantitative and qualitative data collected in Juba in July and December 2016 and in Aweil in December 2016. The quantitative component was designed to collect data on household-level experiences with service delivery and the perception of providers. It consists of three surveys that use randomized selection to produce a representative sample for each targeted city. The sample includes resident households and internally displaced households, including 400 respondents for each targeted location, for a total of 1,200 interviews. Households surveyed in Juba and Aweil include a range of educational, economic, and linguistic backgrounds as well as disparate access to basic services.

For additional insights and perspectives, the qualitative component, which was concurrently conducted with each survey, targeted key informants, including government officials; service providers—directly funded by the government or by consumers; implementers—international nongovernmental organizations (NGOs) and private companies contracted by international donors to deliver services; and service users.

Qualitative and quantitative research instruments were structured along the key themes of access, cost, quality, and accountability of service delivery models within each of the four service sectors; and the analysis presented in this report follows these themes. In addition, the selection of fieldwork locations allowed for comparisons between service delivery in a large and mid-size city—using the data collected in Juba and Aweil in December 2016—and between a city immediately before and six months following an armed conflict, using data collected in Juba in July and December 2016.

### ALTERNATIVE SERVICE DELIVERY MODELS IN SOUTH SUDAN

The financing and delivery of basic services is generally seen as the mandate of the public sector and is considered the norm. There are, however, alternative service delivery models that arise to fill gaps in public sector service delivery in terms of coverage and quality. The World Development Report 2004: Making Services Work for Poor People (World Bank 2004) outlines eight of these models—four of which are variations on client power or accountability relationships. Accountability relationships are generally weak in most fragile and conflict-affected states and contexts, and public services can become the currency of political patronage and clientelism. Even when policy makers want to improve services, they may be challenged by the absence of strong compacts, which are needed to hold both state and non-state providers responsible for service provision.

For all of the four service sectors analyzed in this report, alternative service delivery models are limited in South Sudan. The key models observed are delivery through the government, primarily through donor financing, and delivery through NGOs, churches, and the private sector. In the case of primary education and basic health care, nationwide donor-funded programs support schools, clinics, and relevant government line departments with funds, management oversight, and access to a foreign workforce. Similar levels of support are not available to urban utilities delivering water and electricity; and grassroots alternative delivery models have emerged to compensate for the limited capacity or complete absence of government-funded infrastructure in urban areas. Infrastructure and services in South Sudan are generally supported by donors, with approximately US\$80 million in humanitarian support provided for health, education, and water over the period 2014–17 (United Nations 2017)<sup>1</sup>, representing US\$50.1 million for health, US\$25.4 million for water/sanitation, and US\$4 million for education.

The recent conflict significantly impacted the overall supply of services in the country, with a substantial portion of the government’s budget currently being spent to cover the cost of salaries and security. Financial support to service delivery by South Sudan is limited, especially in recent years; emergency humanitarian support fills most of the gap. Government budget allocations for these sectors were reduced from US\$143.9 million in fiscal 2014/15 to only US\$6.6 million in fiscal 2017/18. Similarly, education expenditures were reduced from US\$237.3 million in fiscal 2014/15 to US\$7.9 million in fiscal 2017/18, and water expenditures from US\$25.5 million in fiscal 2014/15 to only 700,000 in fiscal 2017/18 (table ES1).<sup>2</sup>

**Table ES1. Government Budget Allocations for Health, Education, and Water, Fiscal 2014/15–2016/17 (US\$ million)**

Fiscal Year	Health	Education	Water
2014/15	143.9	237.3	25.5
2015/16	130.3	148.1	15.6
2016/17	9.3	13.8	1.1
2017/18	6.6	7.9	0.7

Source: Ministry of Finance and Economic Planning

<sup>1</sup> United Nations. Central Emergency Response Fund. Allocation Overview 2014-17. June 2017

<sup>2</sup> Ministry of Finance and Economic Planning. Aid Coordination Unit. 2017.

Government financing for basic services needs to increase substantially if it is to have any real impact on service delivery. However, this report focuses on the end use of these services as well as the models of their delivery, regardless of the financing sources.

## PRIMARY EDUCATION

Primary education in Juba and Aweil is financed through a combination of sources, including government, donors, and churches, and delivered at government-run, private, community-run, and religious schools.

<p><b>ACCESS</b></p>	<p>In Juba, students in the surveyed households are distributed across a range of government-run (38 percent) and alternative schools, such as private (24 percent) and religious schools (36 percent). As a result of having access to a diverse school network, primary education is accessible to most households, and enrollment rates are relatively high at 83 percent of school-aged children. While a majority of children are enrolled in school, there are differences between the proportion of children within households that are sent to schools across ethnic groups (Bari vs Dinka, 87 vs 63 percent), access to livelihoods (without income, this drops to 74 percent) and IDP status (only 66 percent of children in IDP families attend school).</p> <p>In Aweil—a smaller provincial city—most students attend government-run schools (58 percent), followed by private schools (34 percent). Enrollment rates are 63 percent; household income was found to play a role in whether a child attends school, with 22 percent of households are opting not to send their children to school at all.</p>
<p><b>COST AND QUALITY</b></p>	<p>Private schools in Juba and Aweil are generally regarded as offering better-quality education due to their access to English-speaking teachers and learning materials. In Juba, private schools are described as better able to manage their resources; in Aweil, they are said to operate under reduced supervision by an inactive county education department, and the quality of teaching is described as mixed.</p> <p>Education that is perceived as being of a higher quality is also more expensive. In Juba, families with children in private schools spend more than double—123 percent—than those with children in government-run schools; in Aweil, they spend 149 percent more. The average monthly spending on private education corresponds to 50 percent of the average monthly household income in Juba and 39 percent in Aweil. Dinka children in Juba are more likely than other groups to be enrolled in a private school.</p> <p>All schools suffer from severe shortages of government-issued textbooks, including private schools—which compensate with their own teaching and learning materials.</p>
<p><b>ACCOUNTABILITY</b></p>	<p>Parent-teacher associations (PTAs) play an important role in school management across the school types, but only half of all parents are aware of their existence. According to school headmasters, PTAs tend to attract chiefs and influential community members. The county education department plays an active role in education delivery in Juba; whereas in Aweil, their engagement is minimal.</p>

## BASIC HEALTH CARE

Basic health care is delivered in the two cities by a range of providers, including the government in close cooperation with a range of NGOs; it is financed predominantly through donor funding. In urban areas, the government–NGO structure is complemented by private clinics.

ACCESS	<p>Respondents visit health facilities somewhat frequently—in Juba, 54 percent of respondents had visited one within a month prior to being interviewed; in Aweil, the rate is 76 percent. The facilities are located close to surveyed households: in Juba, 72 percent of households are less than an hour’s walk away; in Aweil, it is 60 percent). In Juba, respondents had visited a variety of health providers; in Aweil, 80 percent had last visited the Aweil Civil Hospital, run jointly by the government and an NGO- <i>Médecins Sans Frontières/Doctors Without Borders</i>. Sixty-eight percent of respondents in Aweil are unable to recall a government-run provider other than the hospital even though at least three additional primary health care centers operate in the city. As expected, access levels are much more favorable in urban than in rural areas—where distance to facilities is much longer and access to basic services much lower.</p>
COST AND QUALITY	<p>There is no consensus among key household informants as to which provider delivers the best quality service. The survey assessed the quality of health care delivery with questions related to the presence of qualified medical staff, the availability of drugs and equipment, wait times, the importance of each of these indicators and perceptions on the best medical providers. Private clinics are more likely to have needed drugs and equipment available; they are also more expensive on average than government and NGO-run facilities. Eighty percent of respondents who had visited a private clinic say their medical issue was addressed, compared with 61 percent of those who visited a facility run by the government or an NGO.</p> <p>Even though government-run facilities are supposed to provide drugs and services to patients for a nominal fee, the average visit of a government-run hospital costs almost the same as an average visit to a private clinic. This is most likely the result of patients having to privately procure missing health supplies and cover hospitalization costs.</p>
ACCOUNTABILITY	<p>Like the education sector, the county health department is active in Juba but absent in Aweil. Although the government, with donor assistance under the Health Pooled Fund, instituted boma health committees as community-level accountability models integrated into the government’s basic health care delivery structures, it is more common for patients register complaints in person at the facility.</p>

## WATER UTILITIES

The limited infrastructure on which water delivery in the urban areas of Juba and Aweil depend is largely provided by government, while grassroots alternative delivery models extend the distribution network. There are also water services provided through humanitarian support.

ACCESS	<p>Only half of respondents in Juba say that they have sufficient access to water; and although 77 percent pay to have water delivered to their homes by a water truck, two-thirds of water delivered in this way comes directly from the Nile River with no treatment. In Juba, a larger share of Dinka households do not feel they have enough water compared with Bari households. In Aweil, where water is present close to the ground surface and accessed through boreholes and shallow wells, 95 percent of respondents say they have enough water.</p>
COST AND QUALITY	<p>Because delivering untreated river water costs up to 50 percent less than delivering water from a treatment plant, it is the most popular method for accessing water in Juba. But only one-third of surveyed households claim to treat their water with chlorine or its equivalent to ensure that it is potable.</p> <p>In Aweil, water is available for free or for a small monthly charge of 32 SSP paid to water user committees, but treated water is unavailable. Despite the reliance on untreated river and other surface water, only one-third of households treat the water they drink, often by running it through a piece of cloth.</p>
ACCOUNTABILITY	<p>Government line departments in Juba and Aweil receive complaints regarding dysfunctional urban boreholes, but they often lack the necessary resources to make repairs. Water user committees mobilize communities to finance the repair and maintenance of boreholes, and the county water department makes the repairs.</p>

## ELECTRIC UTILITIES

Electricity is absent as a public or alternatively delivered service in Juba and Aweil, as well as in the country as a whole. Households accessing electricity do so through private arrangements.

ACCESS	<p>Electricity can only be accessed through privately installed generators and solar panels. Twenty-five percent of households in Juba and 5 percent in Aweil can access electricity at home through a private source or by connecting to their neighbor's. In Juba, the probability for internally displaced persons to be connected to their neighbor's electricity source was significantly lower.</p>
COST AND QUALITY	<p>Electricity is the only service that maintains the same average price between Juba and Aweil. Those who can afford electricity at home pay on average US\$11 (SSP 870) per month, which represents 23 percent of the average monthly household income in Juba and 31 percent in Aweil.</p>
ACCOUNTABILITY	<p>In the absence of electricity providers—government or alternative—there are no accountability models in place to facilitate the relationship between electricity providers and the government.</p>

## IMPACT OF CONFLICT ON SERVICE DELIVERY

Primary schools reportedly reopened less than two weeks after the July 2016 crisis, and six months later, enrollment rates were back to pre-crisis levels, although the percentage of parents who felt that it was safe to send their children to school dropped from 73 to 50 percent. Some private schools lost students to government-run schools because parents could no longer afford tuition, and some expatriate teachers returned to their home countries. Overall, the two shocks of insecurity and cost increases relative to incomes appear to be key inhibitors to access. According to collected data, there is no evidence of discrimination against certain groups in the two cities resulting from the conflict, however, this may be due to the small sample size: disaggregating cost and safety by ethnicity would have required a much larger sample.

The four main government hospitals in Juba— Juba Teaching Hospital, Al Sabah Children’s Hospital, and the police and military hospitals—stayed open throughout the crisis and, as with education, most providers were fully operational within two weeks. In this context, operational means that the hospital was reopened but continued to face the usual issues of lack of electricity, medical supplies, and staffing, same as before the crisis. For 76 percent of respondents, the increase in the cost of drugs on the market is the most significant impact of the conflict. Government facilities are largely funded in U.S. dollars through donor assistance and are therefore able to absorb the inflation, but private providers are particularly hard hit by the lack of hard currency needed to import drugs and equipment.

Water was hard to find during the crisis, and 50 percent of respondents struggled for up to a week to access water after the end of hostilities, with private water trucks being the first delivery mechanism to begin functioning again. Forty-one percent of respondents in Juba say that they are getting less water six months after the conflict. In terms of access to electricity, the proportion of those with access to electricity in Juba decreased between July and December 2016 from 34 to 25 percent, and all who lost access had been previously connected to their neighbor’s source of electricity. Sixty percent of respondents who had been able to access electricity before the crisis have had to reduce their electricity usage, and 95 percent have had to increase their spending on electricity to maintain access. The conflict changed nothing for the 69 percent without access to electricity prior to the crisis.

## CONCLUSIONS AND RECOMMENDATIONS

Of the four service sectors covered in this study, primary education and basic health care are more fully developed in South Sudan than water and electricity utilities. Both primary education and basic health care comprise a public system that coexists with systems financed and managed by donors and humanitarian organizations, with the public system only partially financed by the government and managed solely or jointly by the government and other actors in the sector. Both rely on a diversified network of service providers, including government-run and alternative facilities, and draw on varied sources of funding. Both have also achieved near full geographical coverage in the two surveyed cities. The primary education system is evolved in terms of integrating government and alternative service providers into a single funding system in which all low-cost schools (government, private, or religious) are eligible for a capitation grant. With health care, private providers are fully excluded from nationwide funding models. While physical access to these services is not an issue in Juba and Aweil, the key challenge now facing the government regarding education and health is to improve cost-effectiveness and quality standards by enhancing the availability of drugs and teaching materials, respectively, and supervision and regulation of private providers. Meanwhile, urban services such as water and electricity rely in great part on government for large-scale provision, and full coverage is currently far from being achieved in the surveyed cities. Although small-scale alternative delivery models have been developed to cover some of the gaps in water provision, a significant investment in infrastructure continues to be sorely needed, especially given that 63 percent of those surveyed still drink unsafe water.

Recommendations were developed based on the findings of the research and the *International Case Studies Report*, including proposed interventions and recommendations for strengthening the role of government in each sector. Fully developed recommendations with proposed next steps are presented in chapter 9.

## INTERVENTIONS

All of the following proposed interventions would improve service delivery only if they are combined with broader policy and governance reform of the respective sectors, a more substantial government financial contribution to the sectors, strengthened government capacity at all levels, and increased participation of the private sector. In addition, while some of these interventions are more relevant to urban areas, such as private sector engagement in education and health, they could also be relevant to rural service delivery challenges.

### Proposed Interventions for Primary Education

- 1. Provide financial support to vulnerable students.** Household income was the one factor found to influence primary school enrollment, but there is currently no fund or centralized system to support the most vulnerable students.
- 2. Provide scholarships to local schools for gifted students.** Juba and Aweil have schools that were judged by some respondents as being of better quality than comparable schools in Uganda. Scholarship programs could support gifted students as well as quality service providers in urban areas.
- 3. Expand access to teaching and learning materials through information and communication technology solutions.** Inspired by the “trainer-in-the-hand” approach to teacher training in Bangladesh and the Eneza Education Platform in Kenya, this proposed intervention advocates for the use of low-cost phones as teaching and learning instruments for teachers and students alike.
- 4. Expand funding to primary schools using the capitation grant mechanism.** This intervention advocates the use of the existing funding mechanism to direct resources to individual schools in need of infrastructure and additional resources.

### Proposed Interventions for Basic Health Care

- 1. Introduce the regulation of private clinics and pharmacies.** Examples from other fragile and conflict-affected contexts could be drawn on, and examples from neighboring countries could be explored to ensure it fits with the South Sudanese context. For example, lessons from the Child and Family Wellness franchising model implemented in Kenya could be studied for its suitability. This intervention advocates for the introduction of a franchise scheme for private clinics based on voluntary self-regulation as a way of compensating for the current lack of regulation.
- 2. Conduct further analysis of patient spending at Health Pooled Fund.** The data from Juba and Aweil suggest that there is a need to design an adequate response mechanism to reduce out-of-pocket spending. Although facilities run by the government and supporting NGOs are supposed to provide access to treatment and medicines that are almost free, this is not found to be the case: in Juba, patients spend an average of US\$11 per hospital visit. More research is needed to investigate whether the spending takes place inside or outside the facilities and why, and to determine ways to reduce such high expenditure levels.

### Proposed Interventions for Water Utilities

- 1. Install consumption monitoring and billing system for the distribution networks in Juba.** Inspired by the mWater platform in Senegal and the CityTaps smart water meters in Niger, this approach recommends the use of a mobile and web-based platform to monitor the state water infrastructure and the use of smart water meters to enhance water infrastructure cost recovery.
- 2. Create a municipal water utility in Aweil.** The German development agency Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) has funded the establishment of municipal water utilities in three small to mid-size towns in the Greater Equatoria Region. Aweil appears to be well positioned for a municipal water utility with its active municipal council and the availability of surface water, however water treatment facilities and water distribution networks are completely lacking.

## Proposed Interventions for Electric Utilities

1. **Expand household-level access to electricity through rent-to-own solar kits.** Inspired by the Lumos Solar Home Systems from Nigeria, this approach advocates for an expansion of household-level electricity access through the introduction of solar energy kits distributed to households on rent-to-own basis.

### GOVERNMENT ROLE

Recognizing that first and foremost, the government should increase its service delivery budget, the following recommendations focus on additional efforts needed from government to improve access to and quality of service delivery.

**EDUCATION.** At the national level, the Ministry of Education, Science, and Technology should focus on reviewing the national curriculum—a source of frequent complaints among service providers—because it impacts alternative as well as government education providers, including the intervention previously mentioned regarding the expansion of access to teaching and learning materials using information and communication technology. At the state level, the Quality Assurance Directorate of the Ministry of Education, Science, and Technology should be empowered through capacity building and resource allocation to fulfill its role of monitoring government-run and alternative school performance and quality of instruction. And the county-level education department should focus on reestablishing contact with communities and strengthening the currently inactive feedback and complaint models.

**HEALTH.** The Ministry of Health is already actively engaged in collaboration efforts with alternative service providers through contracting financed by development partners. The Health Pooled Fund provides resources for Juba and Aweil and other partners support the rest of the country through similar arrangements, such as the Health Rapid Results Program in Jonglei State and Upper Nile State. However, the private health care providers and drug suppliers continue to operate with minimal supervision. The Ministry of Health needs to build its capacity to regulate and monitor private clinics at the national level by participating in the design of a regulatory framework, and at the state and county levels by extending inspections to private facilities. Regulations alone, however, will not be sufficient—they will need to be consistently enforced to be impactful. Monitoring the quality of drugs available in private pharmacies in city markets requires a strong regulatory and inspection department, which includes the regulation of drugs imported into the country.

**UTILITIES (WATER).** County water departments as well as the city and municipal council water departments of Juba and Aweil should be properly equipped with maintenance equipment, spare parts, and water treatment chemicals (e.g., chlorine) that would enable them to carry out their standard duties. In addition, water network monitoring and billing systems, such as the one previously described for Juba, can improve the efficiency of the maintenance and cost recovery. Both bodies could also play an important role in monitoring the quality of water provided by alternative (mostly private) providers, for example, water trucks.

**UTILITIES (ELECTRICITY).** In the complete absence of electricity as a public service, working with the Ministry for Electricity, Dams, Irrigation, and Water and the South Sudan Electricity Corporation in Juba to restart operations should be prioritized. This work could draw on lessons learned from the operations of The National Rural Electric Association community-based electric cooperatives that succeeded in achieving cost coverage before having to shut down for security reasons in the course of 2013 and 2015. More details on the National Rural Electric Association is found in the Service Delivery Status Report (Part 1).

# 1. INTRODUCTION

## 1.1 STUDY BACKGROUND

South Sudan, the world's youngest country, gained independence in July 2011, following the signing of the Comprehensive Peace Agreement between the Sudan People's Liberation Movement and the government of Sudan in January 2009. Soon after the signing of the agreement, a joint mission conducted by the World Bank and the United Nations found that publicly financed and managed service delivery was completely missing from the territory of the future government of the Republic of South Sudan. In response, a process was launched to introduce service delivery structures, funding models, and nongovernmental programs intended to temporarily bridge essential service delivery gaps.<sup>3</sup>

In December 2013, just over two years after the country's independence, civil war broke out between the Sudan People Liberation Army, headed by President Salva Kiir, and the Sudan People Liberation Army-in-Opposition, headed by former Vice President Riek Machar, dividing the country. A peace agreement signed in Addis Ababa in August 2015 was broken when fighting resumed in Juba in July 2016. Extensive armed conflict, food insecurity, and extended economic crisis characterized by high levels of inflation ensued. Alternative nongovernmental models, many initially intended as temporary measures, have become a quasi-permanent part of the service delivery structure of South Sudan.

While poor service delivery is a key issue throughout the country, there is an increasing pressure on urban infrastructure and services due to the rapid and unplanned growth of urban settlements in addition to a substantial influx of returnees, internally displaced persons, and economic migrants. The concentration of returnees in urban areas has resulted in overcrowding and greater pressure on already weak services and sanitation, increasing the health burden and risk of disease outbreak. Large numbers of returning refugees and internally displaced persons are living in vulnerable urban settings, and the insecurity and lack of access to services and livelihood opportunities have complicated the situation further. Moreover, the national strategic response to accelerated urbanization has been weak, and international aid has been primarily focused on rural areas, essentially ignoring urban populations (Pantuliano and others 2012).

The financing and delivery of basic services is generally seen as the mandate of the public sector, but alternative service delivery models exist around the globe to fill public sector service delivery gaps in coverage and quality. The World Development Report 2004: Making Services Work for Poor People (World Bank 2004) outlines eight of these models; four of them are variations on client power relationships, presented in table 1.1. Client power and accountability relationships are weak in most fragile and conflict-affected states, and public services can become the currency of political patronage and clientelism. Even if policy makers want to improve services, they not be able to given strong compacts needed to hold both state and non-state providers responsible for service provision.

**Table 1.1. Alternative Service Delivery Models**

1	Centralized government financing with contracting
2	Centralized government provision
3	Local government financing with contracting
4	Local government provision
5	Client power—experiment with contracts
6	Client power—experiment with self-monitoring providers
7	Client power—experiment with community control and vouchers
8	Client power—imitating the market

<sup>3</sup> Framework for Sustained Peace, Development and Poverty Alleviation. Joint Assessment Mission. March 2015.

In March 2016, the World Bank embarked on an assessment to investigate and analyze the role of alternative service delivery models in two surveyed cities of South Sudan, examining private, community, nongovernmental, and religious actors participating in the delivery of primary education, basic health care, water, and electricity, and contrasting and comparing them to their government-run counterparts to the extent possible in a context where government and alternative services are closely interlinked.

## 1.2 STUDY OBJECTIVES

The objectives of the study are to:

1. Identify and analyze successful models of service delivery in three or four sectors in select urban areas of South Sudan that can be supported and replicated;
2. Recommend relevant international examples of service delivery models that are appropriate to the South Sudanese context; and
3. Identify the appropriate role of government in these alternative delivery models and the capacity building support required to fulfill the role.

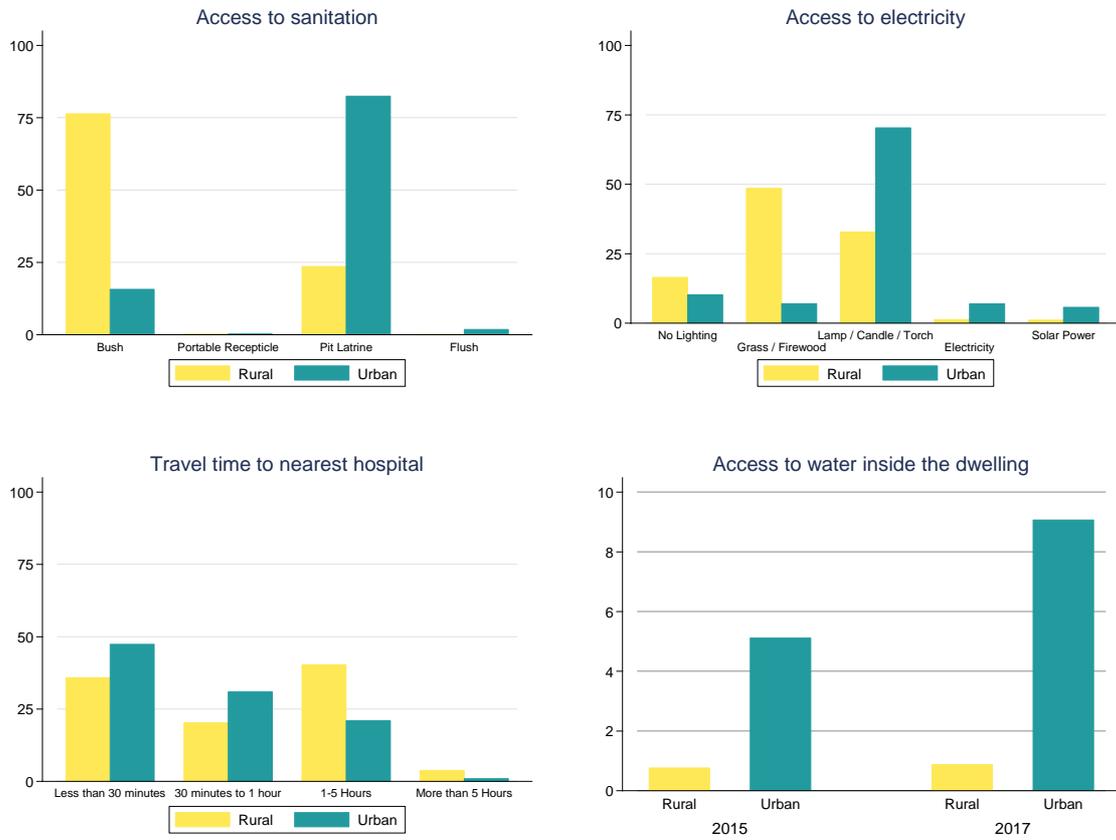
Each of the services analyzed were based on: (1) the cost and quality of services provided; (2) access to services across different income, social, and ethnic groups, with a focus on the impact of perception of safety and security; and (3) accountability relationships between government and end users and between service providers and end users.

Following this introduction, chapter 2 provides context; chapter 3 covers primary education; chapter 4 looks at basic health care; chapter 5 explores water; chapter 6 covers electric utilities; chapter 7 examines the impact of conflict on service delivery, drawing on data from Juba before and after the July 2016 crisis; chapter 8 presents available findings on internally displaced persons and access to services; chapter 9 concludes with a summary of main findings and conclusions across the four sectors studied; and chapter 10 proposes recommendations for further interventions with relevant international examples and identifies the appropriate role of government and the support it needs to fulfill that role.

The political, economic, and social context of South Sudan is undergoing constant change. The macroeconomic crisis and inflation, for example will have an enormous impact on the price data provided by respondents during the surveys and in turn the ability to pay for services. The research team recognizes that the most recent relapse into armed conflict since the events of July 2016 has resulted in a complete shift toward humanitarian life-saving support. Under such circumstances, little space exists for policy discourse around long-term development solutions regarding the provision of basic services. This study seeks to describe the impact of the conflict on service provision and to suggest potential pathways toward more sustainable services when the political security conditions allow for it.

Importantly, the descriptions of the services in the study are not a reflection of service provision throughout the whole country, as physical access is considerably higher in urban areas.

**Figure 1.1. Heterogeneity in Access to Services Between Rural and Urban Areas**



Source: High Frequency Surveys: wave 1, 2015 and Wave 3, 2016–17. Apart from the share of households with water inside their dwellings, share of households represents averages of the two surveys.

## 2. CONTEXT

South Sudan has suffered from a severe deficit of basic infrastructure and services throughout the country even prior to the recent conflict. It is estimated that over 42 percent of the population lacks access to safe drinking water, and only 6.7 percent has access to improved sanitation facilities. Only 44 percent of households live within five kilometers of a health care facility, and there is an average of 134 primary school students per classroom. Moreover, the country has the lowest road density in Africa with less than 2 percent of the primary network paved, making access to the limited number of schools and clinics even more challenging. Maternal and infant mortality rates are some of the highest in the world at 789 and 65 deaths per 100 live births, respectively.<sup>4</sup>

Since the recent conflict, nearly one in three schools in the country has been destroyed, damaged, occupied, or closed, affecting the education of more than 900,000 children, including 350,000 who have been forced out of school by the conflict. It is estimated that more than 686,200 children under the age of 5 are acutely malnourished. The rising cost of living and the impact of the conflict, such as the destruction of water points, have further undermined people's ability to access safe drinking water (UNOCHA 2017a).

It is against this backdrop that this study was conducted in two cities of South Sudan—Juba and Aweil.

### 2.1 PROFILE OF SURVEYED RESPONDENTS

The survey was conducted at the household level, and no quotas were put in place with respect to individual respondents. Enumerators were instructed to interview the present head of household, male or female, and to advise them to answer survey questions on behalf of their household. In cases where both male and female heads of household were present, the respondents were free to answer questions jointly, although the dominant respondent was identified in the survey.

Table 2.1 summarizes the main characteristics of respondents across the two locations, and across two rounds of surveys in Juba and one in Aweil. The country capital is visibly more diverse in terms of education and ethnic affiliation of respondents, while a single ethnic group dominates the smaller, provincial Aweil. Notably, the majority of interviewed Aweil residents did not complete a primary education. As described in appendix A, the second round of the Juba survey covered 65 percent of the households from the first round as well as 35 percent new households. However, this translated into relatively low levels of variation in the sociodemographic attributes of respondents.<sup>5</sup> The largest variation between the July and December 2016 Juba sample relates to the number of speakers of Arabic, which was most likely the result of enumerator error, as explained below.

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<sup>4</sup> Figures from Central Intelligence Agency (CIA) World Factbook. <https://www.cia.gov/library/publications/the-world-factbook/geos/od.html>

<sup>5</sup> Appendix B provides a detailed breakdown of the aggregate of unique respondents, respondents from the first round who were found, and those who were not found. No significant differences were uncovered between the sociodemographic and socioeconomic characteristics of "found" and "not found" respondents.

**Table 2.1. Survey Respondent Characteristics (Juba and Aweil)**

Variable	Category	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Gender	Female	64%	66%	82%
	Male	36%	34%	18%
Age	18-24	11%	17%	24%
	25-34	37%	32%	41%
	35-44	24%	23%	18%
	45-54	17%	13%	10%
	55-64	7%	10%	2%
	> 65	5%	4%	4%
	None	16%	10%	15%
Education	Started Primary	26%	21%	58%
	Completed Primary	9%	14%	9%
	Started Secondary	12%	13%	3%
	Completed Secondary	16%	18%	7%
	Started University	4%	6%	0%
	Completed University	15%	12%	2%
	Arabic	3%	27%	3%
Language	Bari	27%	16%	1%
	Dinka	10%	9%	94%
	Latuko	5%	3%	0%
	Moru	13%	10%	0%
	Other	42%	35%	3%

**GENDER.** The proportion of interviewed women was higher compared with men in Juba, and even more so in Aweil. This is a common feature of household surveys conducted during the day, when men are more likely to be working outside of the home.

**EDUCATION.** In Juba, interviewed sample includes respondents from all educational backgrounds. In Aweil, 58 percent of respondents had enrolled in primary school but dropped out before completing the full eight-year course. Primary school graduates (9 percent) are almost as rare as secondary school graduates (7 percent), and practically no respondents graduated from a university.

**LANGUAGE.** The question of the respondent’s first language was introduced as a proxy for identifying household ethnicity. The Juba sample is diverse, with at least 50 different primary languages identified among the respondents. In Aweil, which is situated in northwestern South Sudan and traditionally settled by the Dinka ethnic group, 94 percent of respondents identify themselves as Dinka speakers. The increase in the proportion of speakers of Arabic in Juba from 3 percent in July 2016 to 27 percent in December 2016 is likely a result of an enumerator error because Arabic is a lingua franca of South Sudan and a primary language in only a small number of households. Thirty-one percent of those identified in the second round of the Juba survey as speaking primarily Arabic say that they also spoke Bari, the most common spoken language among the participants of the first round.

## 2.2 PROFILE OF SURVEYED HOUSEHOLDS

Table 2.2 summarizes the average household size and earnings of interviewed households. In Juba, households interviewed in July 2016 had an average of 4.7 household members of productive age but only 1.3 members who earned an income. The latter number had dropped further to 0.6 in December 2016 as the economic crisis hit Juba. The ratio of adult household members to income earners was more favorable in Aweil—2.5 to 1.3—but average monthly household income remained higher in Juba despite the lower average number of

income earners. Moreover, as will be noted throughout this report, many more households in Aweil earn no income at all (42 percent) compared with in Juba (15 percent in December 2016).

**Table 2.2. Household Sizes and Earnings, Juba and Aweil**

	Juba (July 16)	Juba (December 16)	Aweil (December 16)
Average size of household	9.4	8.7	7.8
Average number of children under 16 years old	3.9	3.5	3.7
Average number of adults over 50 years old	0.8	0.6	1.6
Average number of adults between 16 and 50 years old	4.7	4.6	2.5
Average number of income earners	1.3	0.6	1.3
Households receiving an income (%)	95	85	58
Average monthly household income (SSP/US\$) <sup>a</sup>	2,693/65	3,670/46	2,784/35

SSP = South Sudanese pound; US\$ = U.S. dollar.

a. Forty-one percent of respondents said they do not know their monthly income.

Although the average household income in Juba increased by 36 percent between July and December 2016, the decreasing value of the South Sudanese pound (SSP) against the U.S. dollar meant that it lost 29 percent of its value in hard currency. In addition, the increase in the average household monthly income did not keep pace with inflation: the consumer price index increased by 160 percent over the same period according to data collected by the National Bureau of Statistics.<sup>6</sup>

As table 2.3 shows, three-quarters of households in both locations own the home in which they live. In Juba, respondents live in a variety of buildings, including the traditional mud *tukul* with a grass-thatched roof. In the more rural Aweil, *tukuls* are predominant.

**Table 2.3. Household Living Arrangements (Juba and Aweil)**

Do you own or rent the house where you live?	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Own	77%	78%	76%
Rent	23%	22%	24%
What is the house material out of which your house is built?	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Mud or grass ( <i>tukuls</i> )	36%	31%	62%
Corrugated Galvanised Iron	32%	19%	10%
Concrete/bricks/stone	26%	47%	16%
Wood	2%	2%	12%
Other	4%	0%	0%

<sup>6</sup> See <http://www.ssnbs.org/cpi/2017/1/12/consumer-price-index-for-south-sudan-december-2016.html>.

One of the likely reasons behind the low proportion of renters in Juba and Aweil is the high cost of rent (table 2.4). In Juba, the average rent amounts to almost twice the average monthly income. In Aweil, the cost of rent is lower, but is still not affordable for the 42 percent of households that earn no income at all. Most respondents in both cities did not know the value of their own home. When consulted, local researchers pointed out that most homes and compounds are built incrementally as resources become available and that an average South Sudanese household would not keep a record of their expenses over the years. Without a developed real estate market, it is difficult for homeowners in South Sudan to assess the value of their own home once it has been built.

**Table 2.4. Cost of Renting or Owning a Home in Juba or Aweil**

	Juba (July 16)	Juba (December 16)	Aweil (December 16)
Average monthly rent (SSP/US\$)	5,547/135	5,188/65	2,067/26
Average home value	<b>Respondents are not commonly aware of the value of their homes.</b> In Juba, 72 percent of respondents in July and 95 percent in December said that they did not know; in Aweil it was 77 percent.		
Average size	<b>38 percent</b> had two rooms or less (average household size: 7.2) <b>77 percent</b> had four rooms or less (average household size: 11)	<b>23 percent</b> had two rooms or less (average household size: 5.3) <b>54 percent</b> had four rooms or less (average household size: 9.8)	<b>51 percent</b> had two rooms or less (average household size: 6.2) <b>88 percent</b> had four rooms or less (average household size: 9.6)

SSP = South Sudanese pound; US\$ = U.S. dollar.

### 2.3 PERCEPTIONS OF SECURITY IN URBAN AREAS

On July 8, 2016, following a week of rising tensions and soon after the completion of the first round of the Juba survey, fighting erupted between forces loyal to the South Sudanese President Salva Kiir and the leader of the Sudan People Liberation Army-in-Opposition (SPLM-IO) Riek Machar. According to media reports, the incident left at least 115 soldiers from both sides dead and triggered three days of armed conflict that swept through the city, involving heavy artillery and depopulated parts of the city (See, for example, Burke 2016). Most aid organizations temporarily withdrew from the country following the fight, and it took several weeks for life in the city to return to relative normalcy with regard to service delivery (see chapter 7).

Perceptions of safety in Juba did not significantly change between the weeks immediately prior to the security crisis in July and six months later in December 2016 (see table 2.5). In the lead-up to the crisis, 69 percent of Juba residents felt unsafe, and 3 percent felt very unsafe. Six months after the crisis, 60 percent felt unsafe, and 9 percent felt very unsafe. The change factor was the primary source of their fear: the proportion of respondents who were most afraid of shooting went up from 19 to 38 percent, while fear of robberies decreased by 13 percent. The proportion of those with a direct experience of the incident that they were most afraid of within their household increased from 47 to 58 percent.

**Table 2.5. Perceptions of Safety and Security, Juba and Aweil**

Do you feel safe in this area of the city?	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Very safe	1%	3%	2%
Safe	27%	28%	59%
Unsafe	69%	60%	34%
Very unsafe	3%	9%	4%

What are you most afraid of?	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Not afraid	13%	5%	14%
Shooting	19%	38%	4%
Robberies	63%	50%	77%
Assault	4%	1%	2%
Other	0%	1%	1%

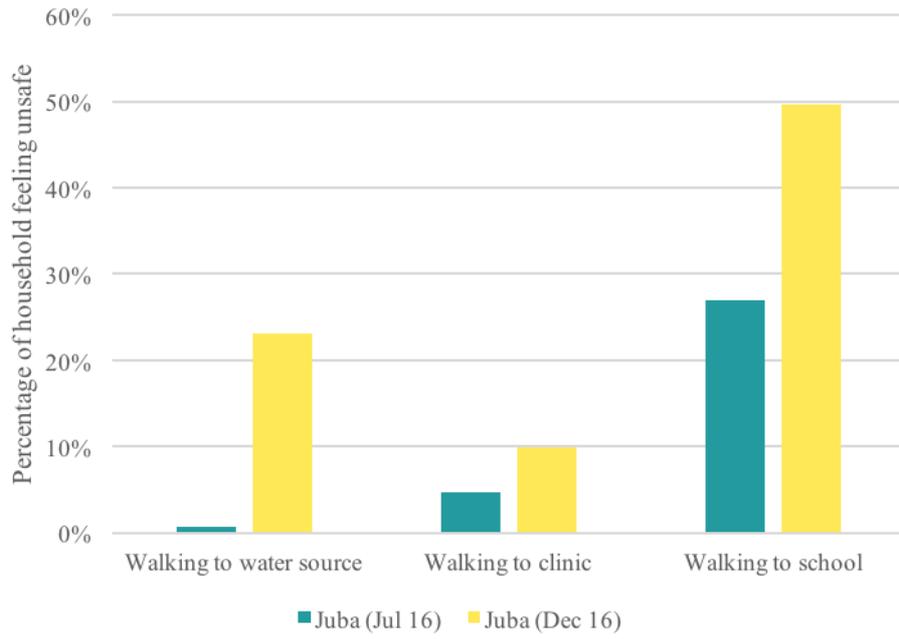
Has this happened to someone in your household in the past three months in this area of the city?	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Yes	47%	58%	93%
No	53%	39%	7%

In Aweil, respondents are more likely to feel safe (59 percent) than unsafe (34 percent). The most dominant fear is of robberies and crime (77 percent) rather than fighting. Criminal activity appears to be widespread in the city—93 percent of respondents claim that they have had a direct experience of the very security incident that they most feared.

Based on the survey results, sociodemographic indicators like gender, age, internal displacement status, and ethnicity have no apparent relationship with perceptions of safety. Whether or not the respondent earns an income also does not appear to matter, but educational achievement—which is correlated to household income—does. Head of households who completed their secondary education or had attended a university feel safer. Among households earning incomes in Juba, an increase of one percent in income increases the probability of feeling safe by 5 percent (controlling for other sociodemographic factors). In Aweil, perception of safety was equally distributed across income groups.

During the second round of the Juba survey, respondents were asked about their response during the conflict itself. The majority (95 percent) of interviewed respondents were still living in the same homes or compounds that they lived in before the conflict. While the fighting was ongoing, 76 percent hid in their homes and 20 percent temporarily vacated them. Most were more afraid of shooting (80 percent) than looting and robberies (15 percent). Significantly fewer household members were affected by an incident between August and December 2016 than prior to July 2016, which may indicate that households were more cautious and went out less frequently. The proportion of households who feel it is unsafe to walk a long distance to a clinic or to fetch water and whose children have to walk in the dark or on a dangerous road increased dramatically between July and December 2016 (Figure 2.1).

**Figure 2.1 Households Felt Less Safe After the Crisis**



### 3. PRIMARY EDUCATION



Photo 3.1. Exterior of Munuki East Primary School in Juba

#### 3.1 PRIMARY EDUCATION DELIVERY MODELS

Primary education in Juba and Aweil is financed through a combination of sources, including the government, donors, and religious organizations; it is delivered through a range of providers, including government-run, private, community-run, and religious schools.

The role of the South Sudanese government is to oversee and regulate primary education, whether delivered by privately owned and managed schools or government-run institutions. Alternative models are also in place at the national level to support the financing and improve the quality of education delivery across the country. National-level delivery models that support the government include Girls Education South Sudan (GESS), a program financed by the United Kingdom's Department for International Development (DfID). GESS plays a key role in enabling capitation grant distribution to alternative providers, including private and church-run schools, as well as other donor-funded programs that contribute to government capacity building, teacher training, physical infrastructure development, and the provision of learning materials.<sup>7</sup> Another significant source of support to the Ministry of Education, Science, and Technology is the Global Partnership for Education program. Together with the United Nations Children's Fund (UNICEF), it concentrates on national systems strengthening through curriculum development, inspector training, and school construction.

<sup>7</sup> For a more detailed account of the structures that deliver and finance primary education in South Sudan, refer to the *Service Delivery Status Report*, part one three reports in this series.

## ROLE OF GOVERNMENT

- At the national level, the role of the Ministry of Education, Science, and Technology is to supervise the national education policy, government resource allocation, and the training of government-employed teachers. The ministry is also tasked with developing and maintaining the national primary education curriculum to which all schools must abide, regardless of its ownership or management type.
- At the state level, the ministry's role is to provide quality assurance by issuing and supervising the *primary leaving exam* and employing inspectors whose task it is to supervise the quality of service delivery for all primary schools in the state. Lack of available transport and fuel tends to limit the mobility of the state-level inspectors.<sup>8</sup>
- County education departments are the most closely involved in the direct supervision of government-run and nongovernment schools. This interaction is most often structured around the administration of capitation grants in cooperation with the GESS program. Payam supervisors serve as liaisons between the county education department and each school in the payam.
- Although the 2009 Local Government Act assigns responsibility for primary education in urban areas to urban councils, because they are often unstaffed with minimal operating resources, the government service delivery structure often bypasses them in practice. In Juba, where the city council structure is relatively well developed, the county education department maintains overall responsibility for primary education, but the council participates in service delivery through the payam supervisors who sit within the block executive and interact with all schools that draw on a capitation grant on behalf of the county education department and GESS State Anchor.<sup>9</sup> The office also assists local schools with additional funding for school supplies on an ad hoc basis, according to the Munuki block executive director.

## ROLE OF ALTERNATIVE DELIVERY MODELS

Alternative models are present in the financing of the overall education delivery system and at the level of grassroots service delivery.

- The majority of primary and secondary schools are supported through annual capitation grants financed by donors, although the government had previously financed primary school grants. The grant distribution system is supported through GESS, a project funded by DfID. Another national-level donor-funded program supporting the education sector is the Global Partnership for Education, which supports the Ministry of Education, Science, and Technology with curriculum development, capacity building, and school construction.
- At the grassroots level, the delivery models are differentiated by type of school ownership and management structure, which divides schools into government-run or private. These are then further divided into religious, community-run, or for-profit.<sup>10</sup>
- For the purpose of this report, private schools are identified as the dominant alternative service delivery model, although both private and government-run schools draw on capitation grants and are subject to the same conditions and oversight.

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<sup>8</sup> No regular inspections were carried out by the Ministry of Education, Science, and Technology in Aweil in 2016, according to the person in charge of the quality promotion directorate.

<sup>9</sup> In urban areas, the *payam* administrative unit is equivalent to a *block*; and a *boma* is equivalent to a *quarter*. See appendix C for a diagram visualizing the local government structure in South Sudan.

<sup>10</sup> A private school can either be a for-profit or a nonprofit entity. At a community-run school, which tends to be nonprofit, the board of directors represents a particular community; at a "regular" private school, the owner(s) appoint the board. Private schools that are not community-run can be nonprofit—there are cases of individuals founding schools designed to deliver services but not to make a profit. As a subset of private schools, community-run schools are not treated as a separate category by Education Management Information System census, but the government and Girls Education South Sudan often make reference to them. The two private schools visited in Juba for this research are self-identified as community-run.

## FUNDING MECHANISMS

- **Ministry payroll.** Government-employed teachers are part of the Ministry of Education, Science, and Technology payroll, which is included in the national budget. The system for transferring salaries from the Ministry of Finance and Economic Planning to individual schools is in place, although it often experiences delays. In June 2016, teachers went on strike to protest the devaluation of salaries and late payments, and as of December 2016, during the second round of research, teacher salaries had not been paid in three months.
- **Capitation grants.** Introduced as an annual funding mechanism, a capitation grant enables a school to invest in infrastructure, purchase teaching materials, and cover administrative costs. Following the June 2016 teacher strike, however, schools are having to use 60 percent of their grants on raising teacher salaries. Primary school capitation grants were previously included in the national budget, but in 2016, began being funded by donors under the GESS program. Any nonprofit school is eligible to apply for a capitation grant, including government and privately managed schools. To qualify, a school must fulfill several criteria. Capitation grant applications and disbursement are monitored by GESS program staff working with the county education department. The size of a grant is partially determined by the size of the school; the rates were doubled in 2016 to keep up with the rate of inflation.
- **Tuition.** Most schools charge tuition or fees of varying amounts to students. Nongovernment schools rely on tuition to fund teacher salaries and the portion of operating costs not covered by the capitation grant. Government-run schools are officially free to all students, but most charge fees in the form of a modest “parent contribution” to cover the cost of basic school supplies and to remunerate “volunteer” teachers not included on the government payroll.

## SCHOOL MODELS

The primary education section of this report compares government-run schools with alternative delivery models: private, religious, and community-run. Table 3.1 outlines the main characteristics of the existing types of schools. The majority is government-run, followed by private and community-run, and finally religious schools.

**Table 3.1. Overview of Primary Education Providers**

TYPE OF SCHOOL	DESCRIPTION
<p><b>Government-run</b> (59 percent of overall schools; 68 percent of primary schools)<sup>11</sup></p>	<p>The Ministry of Education, Science, and Technology directly manages government-run schools. A headmaster and teachers are assigned to their positions and their salaries are covered under the ministry’s payroll. “Volunteer” teachers are often employed directly by the school to reach minimum necessary staffing levels. They are remunerated with “incentives” rather than a salary. The cost of these incentives is covered by the capitation grant or by a small annual contribution from parents. Government schools do not charge tuition or fees aside from a small “contribution,” but parents are expected to purchase school uniforms and learning materials. Capitation grants cover the schools’ operating costs.</p>
<p><b>Private/community-run</b> (18 percent of overall schools in South Sudan and 17 percent of primary schools)</p>	<p>A private or community-run school is any school outside of the government system. Private schools are managed by their board of directors, which appoints the headmaster/director. Private schools can be either for-profit or nonprofit. Many nonprofit private schools are community-run—the board of directors is composed of community members. The communities can be rich or poor. In urban areas, community-run schools are sometimes very high profile, for example, if the founding members are well-known politicians or other local elites. In rural areas, community-run schools are more commonly founded and financed by the local community to compensate for the lack of schools in the area. Community-run and nonprofit private schools use tuition to cover teacher salaries and draw on capitation grants to fund operating costs.</p>
<p><b>Religious</b> (9 percent of the overall schools; 8 percent of primary schools)</p>	<p>Religious schools are privately owned and associated with a religious organization. The Catholic Archdiocese of Juba is perhaps best organized, with a dedicated education office that oversees school operations and teacher recruitment. Religious schools access capitation grants in the same way government-run and nonprofit private schools do, and while some draw on other external sources of funding, not all are financially supported by the religious organization with which they are affiliated. Some religious schools operate like nonprofit private schools, charging tuition to cover teacher salaries, while others try to keep expenses on par with government-run school fees.</p>

### 3.2 ACCESS TO PRIMARY EDUCATION

An analysis of the accessibility of primary education reveals that primary education enrollment rates are higher in the more-developed Juba than in Aweil (by 21 percent). In Juba, a majority of surveyed children are enrolled in alternative (private or religious) schools, while in Aweil most children are in government-run schools. Both towns have a dense network of schools, but households in Juba can choose from a wider array of government and alternative schools offering variations on the cost/quality trade-off.

#### STUDENT ENROLLMENT

In Juba, the interviewed county education department and GESS staff estimate enrollment rates for primary school-aged children to be relatively high: 80–90 percent. Survey results support the following estimates: as of December 2016, 83 percent of children aged 6–16 were enrolled in a primary school.<sup>12</sup> Of those, 80 percent were enrolled in schools in Juba and 4 percent in schools outside the city, including abroad. Even though

<sup>11</sup> Based on data from the 2016 census by the Education Management Information System Unit of the Ministry of Education, Science, and Technology, with support from Altai Consulting.

<sup>12</sup> Headmasters of four primary schools in Juba confirmed that most children start primary school between the ages of six and seven and graduate from P8, the final grade, between the ages of 15 and 16.

several children left Juba after the July 2016 conflict, most who stayed did not drop out of primary school (see chapter 6).

The proportion of households with school-aged children that did not send any of them to school was cut in half between July and December. In Juba, the proportion of internally displaced children enrolled in school decreased after the crisis, but estimates are too imprecise to draw clear conclusions.

The cost of education, in the form of tuition and associated costs such as uniforms, textbooks, and transportation, is the main constraining factor limiting accessibility to primary education in Juba. Table 3.2 summarizes reasons given for not sending children to school in households with at least one school-aged child not participating in the education system. In July’s survey, 81 percent of households cited tuition as the main reason why at least one of their children was not attending school. Between July and December 2016, tuition remained constant, but inflation drove up the cost of uniforms, books, transportation, and other expenses.<sup>13</sup> Household concerns shifted accordingly from tuition (48 percent) to the associated costs (22 percent).

**Table 3.2. Reasons for Not Sending Children to School (Juba)**

Why are some of the children not enrolled in a primary school?	Juba (Jul 16)	Juba (Dec 16)
Tuition fees are too expensive	81%	48%
Associated costs are too expensive (textbooks, uniforms)	1%	22%
Too long distance from home	1%	9%
Schools here are not good enough	1%	5%
Schools don't offer the right grades	0%	0%
Marriage / Pregnancy	1%	0%
For cultural reasons	2%	0%
For security reasons	2%	6%
No response	10%	9%

The staff at the Quality Promotion Directorate of the Ministry of Education, Science, and Technology in Aweil estimated that only half of Aweil’s school-aged children were formally enrolled in the education system. The survey found 63 percent of school-aged children in surveyed households enrolled in primary education, 61 percent of whom were studying in Aweil and 2 percent outside of the city, including in Juba or abroad.

Over one-fifth (22 percent) of surveyed households with school-aged children in Aweil did not send their children to school—three times the rate of Juba. In Aweil, unlike Juba, the difference in the average monthly household income between households with no children in school and those with at least one child in primary school is significant: SSP 1,192 (US\$15) versus SSP 2,998 (US\$37.5). Like Juba, households with at least one child outside of the formal education system say that tuition is the main constraint keeping them from enrolling all of their children in primary school (table 3.3).

Beyond the cost of education, Ministry of Education, Science, and Technology staff members cite poor or lacking physical infrastructure, competing financial priorities, and the relative importance of bride-price over the education of girls as factors behind the low enrollment rates. Government officials and the GESS implementer in Aweil repeatedly pointed out during interviews that, for the majority of parents in the city, education is not a priority. In Juba, societal attitudes toward education did not come up in discussions.

<sup>13</sup> In the majority of schools, tuition is only revised once per year, in February.

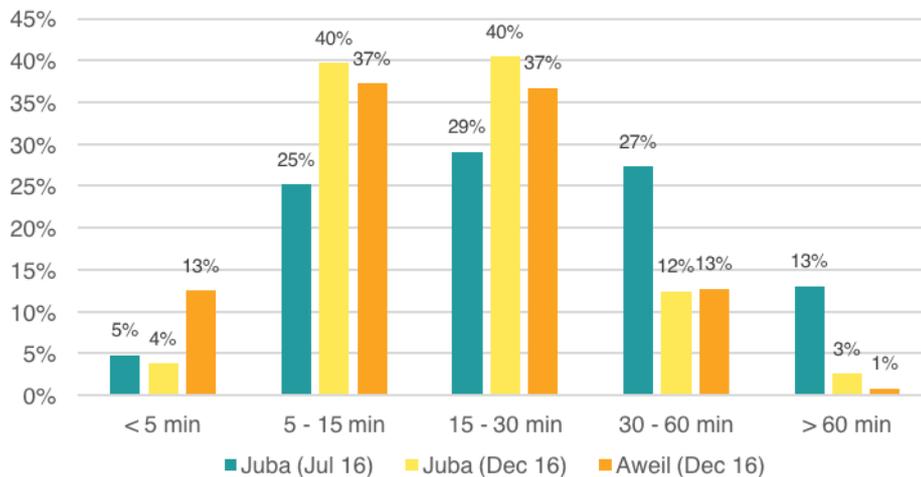
**Table 3.3. Reasons for Not Sending Children to School, Aweil**

Why are some of the children not enrolled in a primary school?	Aweil (Dec 16)
Tuition fees are too expensive	81%
Associated costs are too expensive (textbooks, uniforms)	7%
Too long distance from home	3%
Schools here are not good enough	2%
Schools don't offer the right grades	2%
Marriage / Pregnancy	0%
For cultural reasons	3%
For security reasons	0%
No response	3%

**SCHOOL PRESENCE AND ACCESSIBILITY**

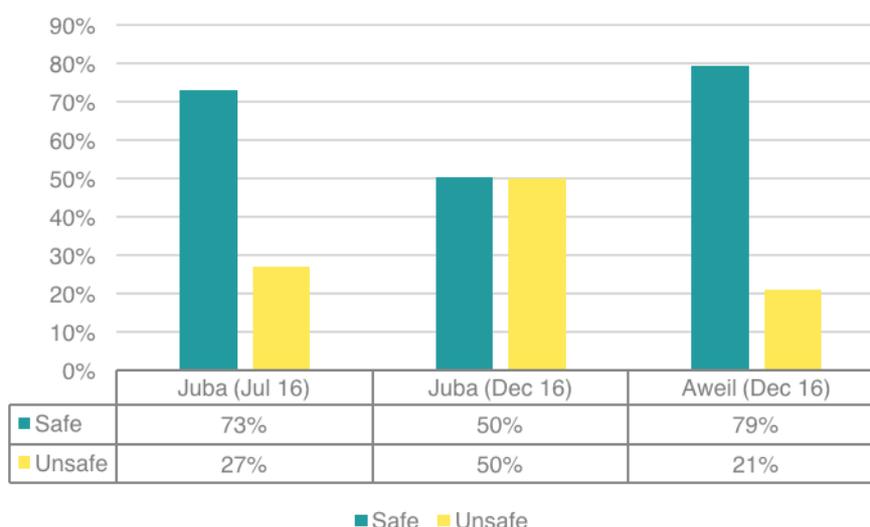
In both cities, households were in close proximity to schools. According to the December survey, 44 percent of children in Juba, walk for 15 minutes or less to reach their primary school; **84 percent walk for less than half an hour**. Children attending private and religious schools tend to have a longer walk: 60 percent more than 15 minutes—compared with 50 percent for government-run schools. In Aweil, 50 percent walk for less than 15 minutes, and **86 percent for less than half an hour**. As figure 3.1 shows, the proportion of children in Juba who took longer than half an hour to walk to school dropped significantly between July and December 2016.

**Figure 3.1. Walking Time to School, Juba and Aweil**



Most children however did not change schools during that period (see chapter 7), indicating either a change in perception or added pressure on children to take the shortest possible route home in a more insecure environment. The proportion of parents in Juba who feel that primary schools are safe to access dropped from 73 to 50 percent from July to December. In addition, Juba households with no earned income are less likely to report feeling safe about accessing education (29 percent) compared with households with an earned monthly income (55 percent). In December 79 percent of parents felt safe sending their children to school in Aweil (figure 3.2).

**Figure 3.2. Security and Access to Primary Education, Juba and Aweil**



During the second round of the Juba survey (December 2016), interviewed households reported sending their children to 94 different primary schools. This represents 62 percent of the total number of schools registered by the South Sudan Schools’ Attendance Monitoring System<sup>14</sup> in the four central payams of Juba County where the survey was conducted (Juba Town, Kator, Munuki, and Northern Bari). Surveyed households in Aweil have access to 42 primary schools—that is 59 percent of the total number of schools registered by the attendance monitoring system in Aweil Centre County.<sup>15</sup> According to 2017 data, Juba primary school enrollment is 116,464 students; in Aweil it is 61,341; and across the country it is 1,306,960.

In Juba, government officials at the national, state, and county level agree that the primary school network is sufficiently dense, but capacity of existing schools needs expansion to prevent overcrowding. Headmasters of the four visited schools confirmed this observation—all reported having to turn away prospective students due to a lack of space. Schools in Aweil reportedly have similar issues with their infrastructure, but interviewed headmasters say they do not turn students away, even if it means they have to sit on a chair brought from home.

<sup>14</sup> Referred to by the acronym SSSAMS, this is the attendance monitoring system of the Girls Education South Sudan program. As such, it only registers schools qualified to receive capitation grants. For-profit private schools and schools that do not fulfill the grant criteria are not included.

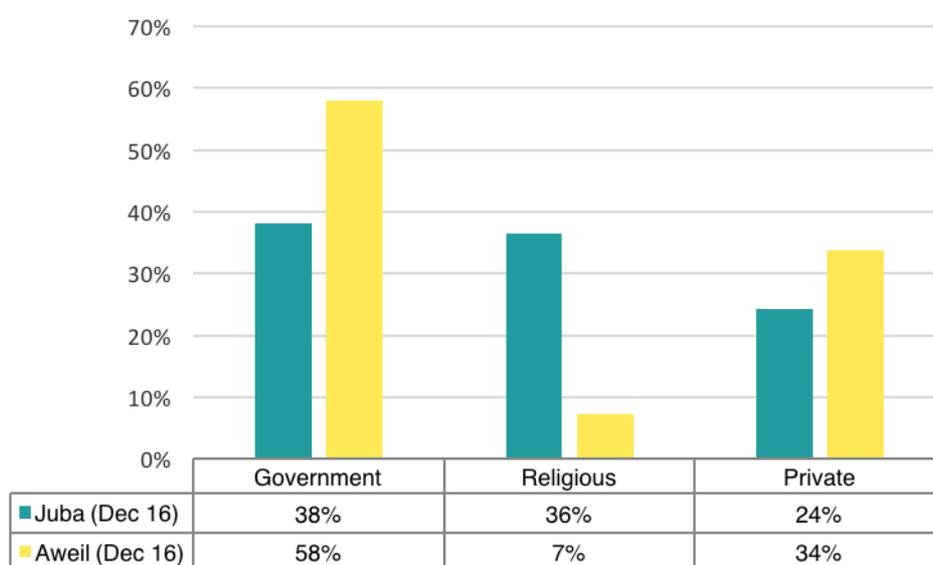
<sup>15</sup> The Education Information Management System records all schools regardless of their eligibility for a capitation grant; however, 2016 census data are only disaggregated at the state level. The system currently registers 470 schools in Jubek State and 476 in Aweil State.

## ACCESS BY SCHOOL TYPE

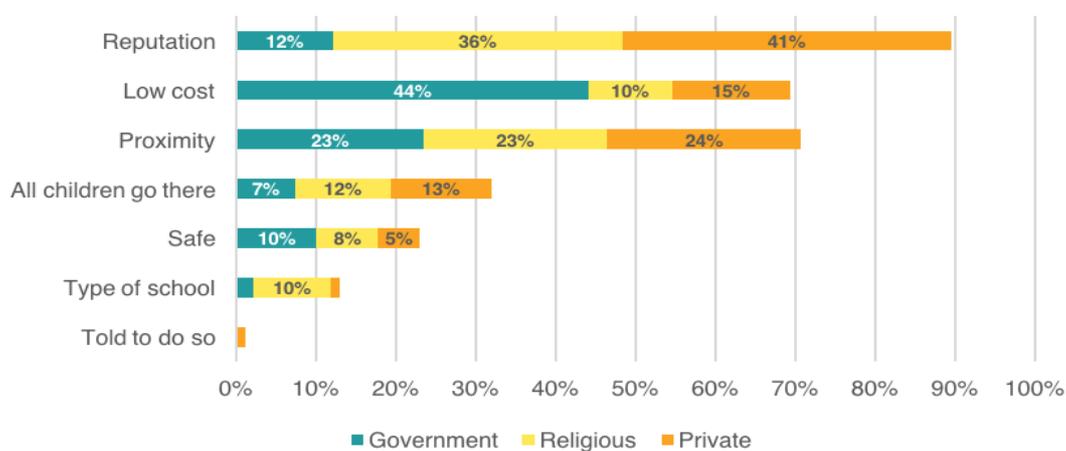
When disaggregated by school type, enrollment rates in South Sudan illustrate the differences between primary education in a large city and a mid-size provincial city. In Juba, education is delivered by a diverse array of primary schools (figure 5). Surveyed households rely on government-run schools (38 percent) as well as alternative service providers (36 percent in religious and 24 percent in private schools). Religious and private schools are chosen mostly for their reputation and government-run schools for their low cost, although proximity to the school also plays a part in choice of school (figure 3.3).

Similar patterns are detected in Aweil, but in a simplified form. Surveyed students are concentrated in either government-run (58 percent) or private (34 percent) schools, and the reputation of private schools as well as the cost of government-run schools were the two most salient factors guiding their choices (figures 3.4 and 3.5).

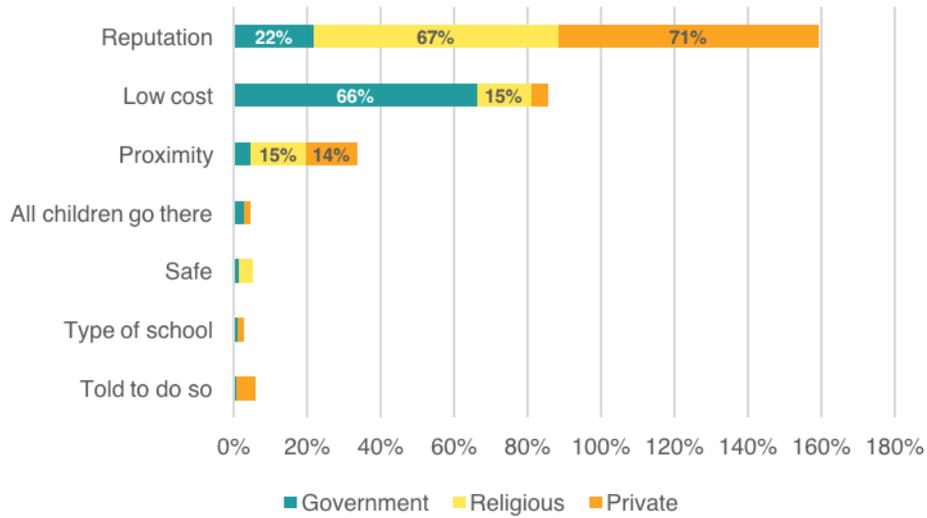
**Figure 3.3. School Popularity by School Type, Juba and Aweil**



**Figure 3.4. Reasons for Choosing School, Juba, December 2016**



**Figure 3.5. Reasons for Choosing School, Aweil, December 2016**



Focus group and interview participants from both towns agree that when selecting education providers, parents tend to prioritize quality within the constraints of their available resources. In both towns, alternative service providers in the form of private schools are uniformly perceived as providing the best-quality education. Many parents, however, particularly in Aweil, cannot afford private school tuition, and this drives up enrollment at government-run schools.

While private and government-run schools are similarly described in both cities, there is a difference in perception regarding religious and community-run schools. In Juba, the religious schools charge fees similar to those of private schools; many described them as maintaining high-quality standards while delivering “moral” and “disciplined” education. Community schools reflect the diversity of Juba—there are schools established in and by low-income communities as well as schools established by communities that include high-profile political actors and businessmen.

According to the Ministry of Education, Science, and Technology and GESS staff, religious schools in Aweil, are similarly priced to government-run schools; and they are perceived as delivering a poorer quality education than government-run and private schools. Community-run schools are most commonly in remote rural areas and lack qualified teachers and professional oversight. Survey results from Aweil (see figure 7) do not fully support these statements on behalf of the local government as they show that parents who choose a religious school are more likely to do so because of the school’s reputation than because of the cost.

### 3.3 COST AND QUALITY OF PRIMARY EDUCATION

There is a widespread perception that there is a trade-off between the cost and quality of primary education. Most government officials, education professionals, and parents agree that private (alternative) schools offer the best teaching quality and the greatest access to teaching materials. However, the schools can only do this by charging tuition, which make them unaffordable to a substantial proportion of households with no choice but to rely on government-run schools.

## COST OF SERVICE

Multiple expenses contribute to the cost of primary education to individual households, including tuition, school uniforms, stationary and textbooks, which are often not available; daily transportation, and the cost of feeding the child while at school. In the survey, respondents were asked to estimate their average spending on education per child per term, excluding the cost of transportation and food (see table 3.4).

**Table 3.4. Average Household Spending on Primary Education**

		Government		Private/Community		Religious	
		Juba	Aweil	Juba	Aweil	Juba	Aweil
Average spending per term	July 16	SSP 365(US\$9)		SSP1,475 (US\$36)		SSP 816 (US\$20)	
	Dec. 16	SSP 817 (US\$10)	SSP433 (US\$5)	SSP1,818 (US\$23)	SSP 1,080 (US\$14)	SSP 1,702 (US\$21)	SSP 444 (US\$6)
Average spending per term as proportion of average household income (%)	July 16	14 (July 16)		55 (July 16)		30percent (July 16)	
	Dec. 16	22 (Dec. 16)	16 (Dec. 16)	50 (Dec. 16)	39 (Dec. 16)	46 (Dec. 16)	16 (Dec. 16)

SSP = South Sudanese pound; US\$ = U.S. dollar.

The reported average household spending per term leads to several observations:

- On average, households in Juba spent 110 percent more on education than households in Aweil in December 2016. Households in Aweil are, however, significantly poorer: 27 percent fewer households earn any income at all compared with Juba, and among those receiving a monthly income, it is an average of 15 percent lower than in Juba.<sup>16</sup>
- The existence of a monthly income has a significant impact on school choice in Aweil, where households earning an income are more likely to send their children to a private school. In Juba, richer families are more likely to send their children to government-run schools rather private ones but prefer religious schools to government-run or private schools.<sup>17</sup>
- In Juba, poorer households, attending mostly government-run schools were particularly affected by the inflation triggered by the crisis, which more than doubled the cost of primary education. Even though the average spending per private school student in Juba (in July 2016) was quadruple that of students at government-run schools, the average cost per term rose by similar amounts for both between July and December (by SSP 343 and SSP 452, respectively), as the market cost of school uniforms and supplies rose while tuition remained the same. Private schools experienced a more moderate 23 percent increase in average total cost.

<sup>16</sup> See section 2.2 Household Profile for additional information on average monthly income of surveyed households.

<sup>17</sup> Note that a single household can send multiple children to different schools, private and government-run.

- Children from Dinka-speaking households in Juba have a higher likelihood of attending a private school rather a government-run or religious school. Controlling for household income and other socioeconomic characteristics, Dinka children are still more likely to be enrolled in a private school. There is an associated difference in the cost paid by households from different ethnicities.
- Although the dollar value of education spending decreased in some cases because of the devaluation of the South Sudanese pound, this made little difference to the overwhelming majority of parents who receive their income in pounds. According to the interviewed headmasters, a substantial portion of parents at the four schools visited in Juba are civil servants, military and police officers, and regular soldiers, whose income depends on the government’s ability to pay wages in the local currency.

To gain insight into how different types of schools raise and manage their finances, the research team visited four schools in Juba and three in Aweil. Information gathered on sources of funding, student fees, and teacher salaries is summarized in table 3.5.

- Most schools rely on a combination of the capitation grant and tuition for their funding. Government-run schools also access funds through the government payroll. A capitation grant tends to cover smaller portion of the overall budget than tuition, but the funds arrive on time, giving school management a degree of financial stability.
- Private and religious schools pay premium salaries for better teachers, equivalent to the highest pay grade on the government payroll.
- All interviewed headmasters say they allow parents to pay tuition in installments based on their ability to pay. The headmaster of St. Kizito Primary School in Juba estimated that only two-thirds of parents manage to pay the full tuition by the end of every school year.
- All the schools visited in Juba and Aweil say that they provide ad hoc financial support to vulnerable students either by waiving the tuition or using school funds to subsidize the associated education costs. Cases are decided individually by each school and often target orphans.
- When dealing with budgets, grants, and student fees, visited schools have to demonstrate financial accountability to the county education department, to GESS, and to the parents. (See section 3.4—Accountability Relationships in Primary Education—for more details.)

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*“When parents come with something little, we do not reject them.”*

*Headmaster of St. Kizito Primary School, Juba*

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**Table 3.5. Examples of School Funding Models by Type**

	JUBA			AWEIL		
	Government	Private/Community	Religious	Government	Private	Religious
<b>Name of school</b>	<b>Munuki East Primary School</b>	<b>Juba Proper International Day and Boarding School and ELOI Nursery and Primary School</b>	<b>St. Kizito Primary School</b>	<b>Aweil National</b>	<b>South Sudan Electricity Corporation</b>	<b>St. Mary's Primary School</b>
<b>Sources of funding</b>	Government payroll (salaries) Contribution from parents Capitation grant	Juba Proper: tuition, capitation grant; board members raise additional funding ELOI: tuition, capitation grant, ad hoc support from nongovernmental organization	Tuition Capitation grant	Government payroll (salaries) Tuition Capitation grant	Tuition Capitation grant	Tuition Capitation grant
<b>Tuition</b>	SSP 150 per year	Juba Proper: SSP 1,000 per term (day school) ELOI: SSP 350 per term	SSP 1,200 per year	Nominal fee	SSP 700 per term	SSP 800 per year
<b>Size</b>	900 students enrolled (P1–P8)	Juba Proper: 446 enrolled students (P1–P8) ELOI: 735 students (P1–P8)	1,268 enrolled students (P1–P8)	668 enrolled students (P1–P8)	415 enrolled students (P1–P8)	830 enrolled students (P1–P8)
<b>Staffing</b>	27 teachers (21 permanent and 6 “volunteer”)	Juba Proper: 10 teachers ELOI: 13 teachers	34 teachers (20 permanent and 14 “volunteer”)	25 teachers	15 teachers	21 teachers
<b>Teacher salaries per month</b>	Permanent: SSP 500/600–1,950 (depending on the grade, government payroll) Volunteer: SSP 600	Juba Proper: SSP 1,800 ELOI: SSP 2,000	Permanent: starting salary SSP 1,300, based on experience Volunteer: maximum of SSP 1,500, based on number of teaching hours	Permanent: SSP 300/400–1,400 SSP (depending on the grade, government payroll)	<i>Not available</i>	Permanent: SSP 1,250

SSP = South Sudanese pound; US\$ = U.S. dollar.

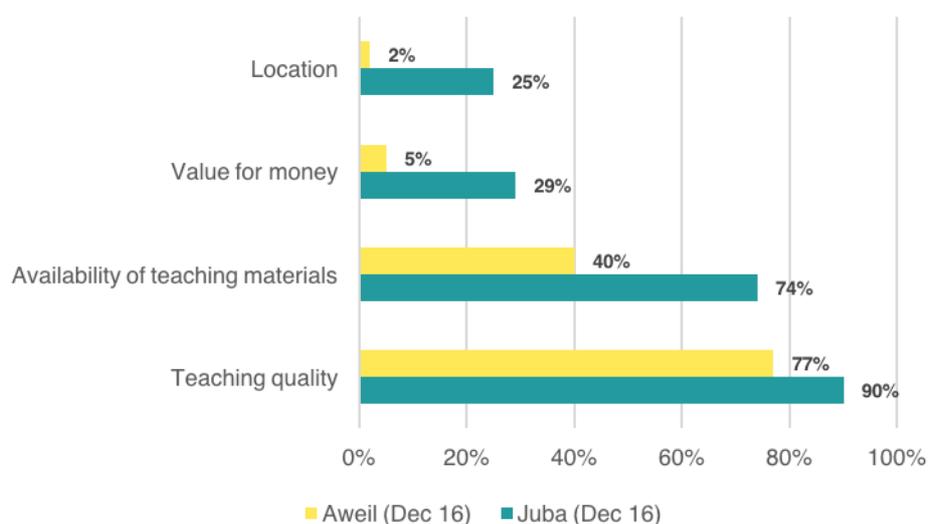
## QUALITY OF SERVICE

Quality of education delivery is not systematically monitored or reported within the education sector. It is the role of the Quality Promotion Directorate within the Ministry of Education, Science, and Technology to coordinate exams, conduct teacher trainings, and carry out inspections focused on teaching materials and quality. However, due to a chronic lack of resources, this role tends to be limited to processing the results of the primary leaving exam.<sup>18</sup> While the GESS program has a system in place for ongoing monitoring of enrollment rates and capitation grant budgets, no performance or quality indicators are being currently tracked.

All of the interviewed government officials and GESS implementing staff members agree that private schools—as well as religious schools operating like private schools—offer the best quality education in Juba and Aweil because of their access to better teachers and teaching materials.

To see what type of school was associated with the best-quality education, respondents were asked which school they thought was the best in the city. Their responses mirrored those of education professionals, emphasizing teaching quality and availability of teaching materials. Responses in Juba were diverse, but 23 percent of respondents agreed on Usratuna, a religious primary school with an established history in the city but that charges SSP 1,000 tuition per term. In Aweil, 58 percent of respondents named the Paul Malong Foundation Primary School, a private school opened two years ago by the prominent politician. Figure 3.6 summarizes the reasons respondents gave in choosing the best school.

**Figure 3.6. What makes a school be considered the best?**



The following section looks in detail at teaching quality and availability of teaching materials, the two qualitative indicators most valued by survey and interview participants in Juba and Aweil, in addition two indicators commonly used to assess quality of service delivery—class size and average number of hours taught per day.

<sup>18</sup> The Quality Promotion Directorate within the Ministry of Education, Science, and Technology in Aweil did not carry out any inspections in 2016 due to a lack of transportation arrangements.

**TEACHING QUALITY.** The difference between government and alternative schools that is most frequently mentioned and the most commonly identified factor behind the superior quality of private schools is the availability of qualified teachers.

- Private schools were described as having more foreign, English-speaking teachers, but the higher quality of teaching was often simply ascribed to private schools paying teachers well and on time. Government-run schools like Munuki East Primary School depend on the chronically delayed government payroll, and headmasters have no recourse when teachers—who may not have been paid for months, do not show up for all of their teaching hours.
- Most teachers in government-run schools go through a three-week in-service training course, but most respondents described this as insufficient.
- Government-run schools in Juba and most schools in Aweil suffer from a lack of English-speaking teachers, even though English is the official language of instruction. With larger budgets, private schools have more control over their teaching staff, for example, the Juba Proper Primary School does not hire Arabic-speaking teachers as matter of policy.
- Schools in Aweil struggle to find teachers. In addition to the lack of English-speaking teachers, headmasters complain of a shortage of female teachers, which they believe affects enrollment rates among girls. Most people interviewed agree that the most capable teachers find jobs with nongovernmental organizations, where they can earn SSP 10,000–20,000 per month—ten times the amount a teacher at a private school in Aweil might earn.

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*“All in all, teaching is not taken as a job any more. Even in the community, teachers are not seen as having proper work. The family of a potential bride will not want her to marry a teacher. They are seen as watchmen, gatekeepers, at best.”*

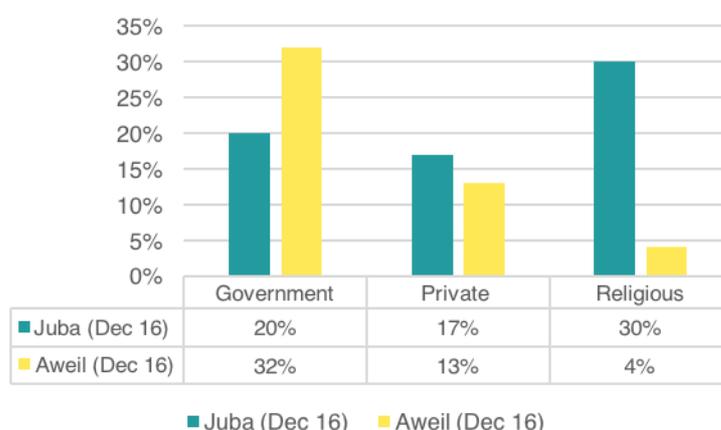
*Headmaster of a primary school, Aweil*

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Apart from teacher availability, the quality of the curriculum affects teaching quality. All primary schools are required to follow the government-issued curriculum, and all the visited schools did. However, the headmasters and the county- and state-level Ministry of Education, Science, and Technology officials agree that the curriculum needs to be revised and substantially updated, especially for social studies and sciences. Many private, high-quality schools follow the example of Juba Proper Primary School and fill the gaps in the government curriculum with the one issued by the government of Uganda.

**AVAILABILITY OF TEXTBOOKS.** The lack of textbooks affects all schools, regardless of type. Among the visited schools, the worst affected was ELOI Nursery and Primary School, a low-cost and community-run private school that borrows textbooks from a nearby government-run school. None of the visited schools, including the relatively more expensive private schools, have enough textbooks for all students or for all subjects. Figure 3.7 summarizes the availability of textbooks at schools where children from surveyed households are enrolled, as perceived by the respondents.

**Figure 3.7. Textbook Availability, Juba and Aweil**



Fewer private schools are described as having textbooks available than government-run schools, but this does not affect their reputation for delivering higher quality education. Private and religious schools often develop or adapt their own teaching materials in the absence of government-issued textbooks.

**CLASS SIZE.** There is consensus among those interviewed that primary schools, especially those run by the government, are overcrowded. The household survey confirmed this. The average class size in government-run schools is estimated at 92 students; class size for religious and private schools is 75 and 70, respectively. The overcrowding problem in Juba has led all interviewed headmasters to turn away prospective students because their schools were already full beyond capacity. The government-run Munuki East Primary School has the highest average number of students per class. While the headmaster was willing to cap the number of students per class at 80, he says he was asked by the county education department to increase the limit to 100. Table 3.6 summarizes the average number of students per class as reported by the headmasters. Even though there are numerous schools, overcrowding is explained by the paucity of classrooms and the insufficient number of teachers, resulting in one or two classrooms hosting all children attending a school.

**Table 3.6. Average Class Size by School Type Reported by Headmasters**

	Government	Private/Community	Religious
Class size in JUBA	Munuki East Primary School: average of 100 students	Juba Proper Primary School: 40–50 students ELOI Nursery and Primary School: 123 in P1, 36 in P8	St. Kizito Primary School: average of 75 students
Class size in AWEIL	Aweil National: 70–80 students	South Sudan Electricity Corporation: 40–50 students	St. Mary’s Primary School: 40–50 students

**TEACHING HOURS PER DAY.** The number of hours that children are required to spend at school is regulated, and it is the same standard for all primary schools regardless of type. The survey found this to be almost true in practice. In Juba, a student in a government-run school spends on average half an hour less per day at school than students attending private or religious schools. In Aweil, a student spends an average of an hour less at a government-run school. Most interviewees agreed that the importance of the number of hours spent at school is secondary to the presence of teachers and learning materials and the quality of teaching.

### 3.4 ACCOUNTABILITY RELATIONSHIPS IN PRIMARY EDUCATION

Conditions attached to the distribution of capitation grants—the important source of funding overseen by the county education department and the GESS program—generate the strongest accountability mechanisms that bring together the government, the community the GESS State Anchor in the form of parent-teacher associations (PTAs) and school management committees. However, the presence of PTAs and school management committees did not translate into strong feelings of engagement on behalf of parents.

The role of the GESS State Anchor is to build capacity of the county education departments and work together in supervising the school's ability to fulfil the conditions that allow it to draw the capitation grant. In Juba, the role of the State Anchor was centered around capacity building and support to the county education department, whereas in Aweil, the State Anchor effectively carried out the functions of the county education department, which was described as dysfunctional at the time of research.

#### SCHOOLS, THE GOVERNMENT, AND THE COMMUNITY

According to interviews with GESS and government staff, the GESS State Anchor and the county education department cooperate with one another in Juba despite the common constraints caused by a lack of cars and fuel for government offices. The situation was very different in Aweil, where the county education department and GESS staff described the county education department as passive, with most school supervision conducted by the GESS State Anchor staff. According to the interviewed GESS staff, the Ministry of Education, Science, and Technology can be slow to register schools, which complicates the administration of capitation grants and can lead to private schools operating without government regulation.

All visited schools draw on capitation grants and therefore have a PTA to manage the relationship between the school and the community, and a school management committee focused on the school's financial accountability toward the community and the county education department. Some PTAs predate the capitation grant mechanism, but the implementation of capitation grants and the associated requirements are likely to spread accountability models across a wider array of schools and cement their importance.

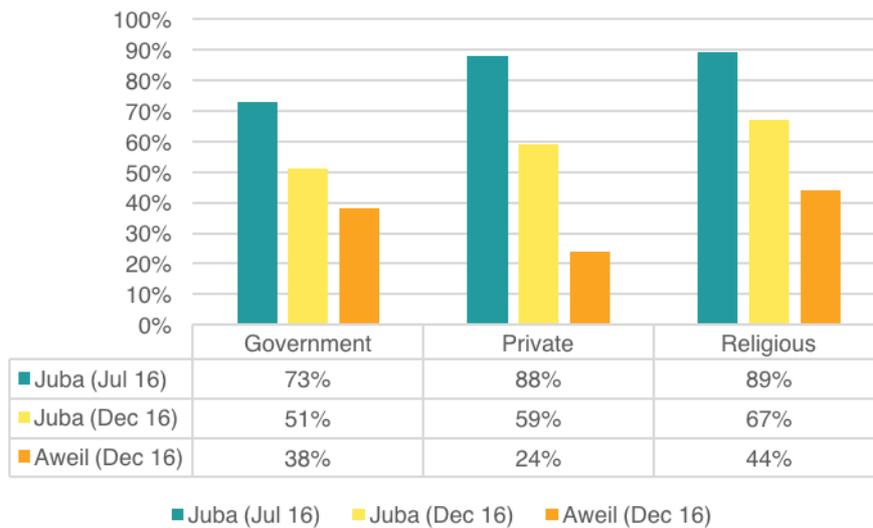
**Parent Teacher Associations (PTAs)** in the visited schools have between 9 and 13 members made up of the headmaster, teachers, parents, and student representatives. Members are elected by parents every two years during a general assembly and meet with the school headmaster at least once per term to discuss issues affecting school management and performance.

PTAs are described as playing a particularly important mediation role between the school and the community in a context of chronic shortages of qualified teachers and learning materials. Some of the PTA responsibilities mentioned in the interviews include:

- Calling a general assembly once a year where the size of the annual fee or parental contribution is discussed (across all schools);
- Deciding the size of the voluntary teacher incentive (in government-run schools) and the size of the teacher salaries (across all private schools); and
- Settling student disciplinary cases, including fights and truancy (mentioned as particularly useful by most headmasters).

Figure 3.8 illustrates the PTA presence across the three dominant school types in Juba and Aweil as perceived by the survey respondents. It shows that awareness of PTAs drops sharply between July and December 2016, but that respondents continue to be more aware of PTAs at private and religious schools. In Aweil, on the other hand, only 24 percent of private schools and 38 percent of government-run schools are thought to have a PTA. The drop in PTA awareness in Juba likely reflects a reduction in the level of PTA activities after the July 2016 crisis, rather than actual reduction in the number of PTAs.

**Figure 3.8. Reported PTA Presence by School Type, Juba and Aweil**



Not only were private schools in Aweil perceived as having the fewest active PTAs, but 53 percent of respondents said that they have never interacted with the PTA in their child’s private school, compared with 21 percent of those with children in government-run schools. This supports the statements made by the Aweil county education department and GESS staff that private schools in the city are operating under lower levels of scrutiny compared with the other types of schools, at least in part due to the lack of government inspections. In Juba, the situation was reversed: only 9 percent of respondents with children in private schools said they have never interacted with the PTA, compared with 21 percent of those with children in government-run schools.

In religious schools, the PTA mechanism is often circumvented by another connection between the school and the community, which is the parents’ affiliation with the church attached to the school. Many parents tend to select a religious school with the intention of belonging to a community: at St. Kizito Primary School in Juba, most parents come to the biweekly mass where school affairs are discussed and they are given a chance to interact with the teachers and the headmaster. Even so, when interviewed, the headmaster talked of ‘disengaged parents’ as one of the biggest obstacles to his work.

**School management committees** at the visited schools were similar in size and composition to the PTAs, but with members appointed by the school administration, based on their skills to create and manage budgets. The primary task of the school management committee is to develop the School Development Plan and School Budget and to account for the spending of the capitation grant.

At religious schools, the church, rather than the school management committee, manage the overall budget, decide the size of teacher salaries and consult with parents on the size of the tuition. If the school receives a capitation grant, the school management committee will however still be present and involved in accounting for the capitation grant spending.

- Because many schools rely on the capitation grant for financing, they also have to incorporate the required accountability models into their management structures. All visited schools had a school management committee made up of teachers, parents, and students that manage the capitation grant budget and sometimes the school’s overall budget. School management committee members tend to be appointed for one year by the school headmaster or the school management.

- In Juba, private schools managed their finances better according to the county education department and GESS staff. Private schools in Juba were said to see capitation grant as an opportunity to invest in the school and to have higher capacity management staff who feel ownership of the school. In Aweil, **Government-run and religious schools** were identified as better by the same respondents. Private schools in Aweil appear to be under less supervision, which allows some of them to get away with poor financial management.

### PRESENCE OF COMPLAINTS MODELS

Education is the least complained about service compared with the other services studied (6 percent in Juba had personally complained when asked in December 2016). In Aweil, complaints were more common among respondents compared with Juba (22 percent of respondents complained about education). The perceived effectiveness of complaints about education declined in Juba between July (53 percent) and December (31 percent). In Aweil, 30 percent said the same for education. In Aweil, households with no income were less likely to have complained about education (15 percent of households with no income complained compared with 27 percent of households with an income).

Respondents were also asked as to whom they would approach if they decided to raise a complaint. Table 3.7 summarizes their responses. It shows that PTAs were a popular choice in Juba (although their popularity declined after the conflict), while in Aweil most respondents felt that they had nowhere to go or did not know whom to turn to.

**Table 3.7. Where would you go to complain about a service?**

	EDUCATION		
	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Local government	6%	9%	4%
Community leaders	10%	12%	4%
School Board of Governors	20%	9%	6%
PTA	39%	19%	3%
Nowhere to go	20%	53%	24%
Don't know	18%	36%	31%

## 4. BASIC HEALTH CARE



Photo 4.1. Patient room in the Kator Primary Health Care Center in Juba

### 4.1 BASIC HEALTH CARE DELIVERY MODELS

Alternative service delivery models are embedded within the health care delivery system at every level. The government health care system that covers most of the country is financed in most part through donor financing, managed by private contractors and delivered by many international and local nongovernmental organizations (NGOs) in cooperation with government-financed staff. Outside of this system, privately owned and managed facilities operate independently and under minimal or no supervision.

Despite this complex system heavily dependent on external assistance, 45 percent of survey respondents in Juba and 58 percent in Aweil said that in their opinion, government should bear the primary responsibility for health care delivery. Only 7 percent of respondents in Juba and 14 percent in Aweil believe that responsibility for health care delivery should go to the NGOs.

#### ROLE OF ALTERNATIVE DELIVERY MODELS

- The Ministry of Health is responsible for the delivery of basic health care in South Sudan. However, in reality, basic health services are delivered in a complex system including government, humanitarian, NGO and faith based actors.
- Services are financed through various channels, mostly outside the public channel. There are currently two large channels that finance services through alternative service delivery models: the Health Pooled Fund (HPF) and the Health Rapid Results Project. The HPF covers eight of the former 10 states, including the two cities covered under this study.<sup>19</sup> Under the HPF, partners support service delivery through both public and nonpublic facilities to deliver primary healthcare. The Ministry of Health

<sup>19</sup> The (former) states covered by the HPF are: Central Equatoria, Eastern Equatoria, Lakes, Northern Bahr el-Ghazal, Unity, Warrap, Western Bahr el-Ghazal, and Western Equatoria.

maintains the list of facilities that are supported under the program, participates in the selection of county implementing partners and sets the county-level budget ceilings for basic health care in cooperation with the HPF Fund Manager. Whereas under the Health Rapid Results Program, the government is responsible for the process of contracting the fund manager and ensuring that the basic package of essential health services is implemented across all facilities. The program also supports hospitals at the state and county level.

- The county health department is responsible for government-owned facilities and coordinates requests for drugs and equipment, in addition to managing government-contracted staff. It is the main unit of implementation of health services in South Sudan. Under the primary health care (PHC) models, the county health department works closely together with the HPF and the Health Rapid Results Program supported county implementing partners and shares the same office wherever possible.
- The county health department is also responsible for coordinating among all health actors in the county, many of whom receive their funding from humanitarian agencies/sources and are not part of the government health care system. The humanitarian cluster is a strong contingent of the overall health delivery system. Whether a government-led coordination mechanism is in place in every county depends on the capacity of the individual county health department.

#### **ROLE OF ALTERNATIVE DELIVERY MODELS**

- Two donor-led programs fund the delivery of basic health care in South Sudan. The first is the Health Pooled Fund, or HPF, now in its second phase, which is supported by a consortium led by DfID that includes Sweden, Canada, the European Union, and the United States Agency for International Development (USAID). In addition, the World Bank supports the government through the Health Rapid Results Program, which covers the former Jonglei and Upper Nile states (the fund covers the rest of the country).
- Both donor-financed projects have a similar alternative service delivery model focused on implementing the Ministry of Health's basic package of essential health services, or BPHS. The fund managers of both projects support delivery of basic health care services through county implementing partners with a varying degree of collaboration from local line ministry departments, mostly defined by levels of capacity of the state and county health departments. County implementing partners are independent private contractors contracted by either the HPF or Health Rapid Results Program through the fund managers, although the contracting process differs between the two projects. The county implementing partner is responsible for ensuring that the basic package of health services is delivered to the required standard and for building the capacity of the county health department and the county's medical workers.
- The government is responsible for procuring health commodities, but since 2013, even government-run facilities have been covered by partners, including the HPF and the Health Rapid Results Program (see box 4.1).
- The basic health care system is complemented by privately operated clinics that receive no external support and that are not subject to the same regulations as their public counterparts; religious facilities tend to voluntarily adopt basic government health care regulations but do not rely on government or partner funding.

#### Box 4.1. Procurement of Health Commodities in South Sudan

*Health commodities* are items such as drugs, cotton, small equipment, and laboratory material that need to be replenished on an ongoing basis. In the years immediately following South Sudan's independence, health commodities were procured by the World Bank through the Multi-Donor Trust Fund for the whole country. The system was seen as a temporary measure to bridge the gap between independence and the government developing the capacity to take over health commodity procurement.

The program expired in 2013, and the South Sudanese government unable to take it over, the Emergency Medical Fund, financed by the Department for International Development, Norway, and the United States Agency for International Development (USAID) was launched to replace it. When the fund expired in the early 2016 without a replacement, a decision was made to fold the health commodity procurement into the HPF and the Health Rapid Results Program. For the first two quarters of the second phase of HPF, the Department for International Development financed the procurement of drugs for the whole country through Crown Agents and the International Procurement Agency, or CAIPA, the pharmaceutical distribution program. As of 2017 HPF is expected to procure medical commodities for its eight states and World Bank for the two states supported by the Health Rapid Results Program.

Previously, under the Emergency Medical Fund and CAIPA, the procured medical commodities were channeled through the government system, from national to the state and county levels, and then to individual facilities through a push system that replenishes stocks every three months. At the time of research, it was not clear whether this system would be preserved under HPF. Separately from the central procurement system, HPF county implementing partners receive a small budget to replenish essential drugs when central stocks run out.

#### FUNDING MECHANISMS

- Both Juba and Aweil fall under the Phase 2 of HPF, which funds the delivery of health care in eight (former) states. Due to an increase in the overall number of counties under the new administrative division, the Counties have been divided into 23 'lots' for the purpose of the HPF implementation and are serviced by 17 county implementing partners. The average spending per lot is expected to be approximately 2.5 million pounds sterling (approximately US\$ 3.4 million) over the course of two years, a decrease compared with Phase 1.
- Under HPF, the budget ceiling for each county is decided jointly by the contracted fund manager and the Ministry of Health. In each county, the county implementing partner together with the county health department decide on how to allocate the available funds among the different facilities.
- HPF was designed to avoid direct cash transfers from the fund to the government and the facilities. To support the facilities, the county implementing partner contracts and pays the salaries of medical staff, carries out small-scale renovations and maintenance works, procures some of the equipment and a limited buffer stock of essential drugs, and organizes community outreach activities and technical training.
- HPF is focused on aiding county-level primary health care facilities, but limited support is also given to secondary facilities on the county and state level (See Table 13 for the difference between the two). Faith-based facilities that comply with the government regulations of the basic health care delivery are also supported, although they represent less than 10 percent of the overall number. For-profit private clinics do not qualify for HPF support.
- Government participates in the funding of primary health care through the government payroll and operational fund transfers intended to cover the operating costs of the Ministry of Health, the county health departments and some of the facilities. During fiscal 2015/16, 70 percent of medical staff in Central Equatoria was government-funded, significantly more so than in the other states, however the operational fund transfers were minimal and rarely reached primary care facilities.

**PROVIDER MODELS** Table 4.1 provides an overview of health providers across the three tiers of the South Sudan health care system.

**Table 4.1. Overview of Health Care Providers**

FACILITY TYPE	DESCRIPTION
PRIMARY	<p>Primary health care centers are the first referral health facility in the basic health care system, staffed by ‘qualified health professionals’ including a clinical officer and three registered nurses or midwives. It was originally expected to offer laboratory diagnostics and a 24-hour basic Emergency Obstetric and Neonatal Care and an observation ward.</p> <p>Primary health care units are the frontline health facilities that support the primary health care centers. Staffed by community health workers and a community midwife, they focus on basic preventive and curative services.</p>
SECONDARY	<p>County and state hospitals provide emergency surgical operations in addition to the services provided by the primary health care centers. Hospitals should be staffed with general medical specialists (surgeons, obstetricians, physicians and pediatricians).</p>
TERTIARY	<p>Teaching Hospitals are set up to serve as centers of expertise and learning within a country’s health care system. The only fully operational Teaching Hospital in South Sudan is the Juba Teaching Hospital. Due to the lack of equipment, fuel and human resources, the hospital continues to focus on fulfilling basic functions.</p>
PRIVATE CLINICS	<p>Private clinics range in size from simple local clinics to a fully equipped hospital (Juba Medical Complex) that offers some of the most advanced care in the country. All private clinics must be staffed with qualified doctors, which puts them above primary health care centers in terms of available expertise. Although the clinics are monitored by the Ministry of Health, inspections are relatively rare, and private clinics are not required to submit data to the ministry.</p>

## 4.2 ACCESS TO BASIC HEALTH CARE

Juba has a relatively dense and varied network of health facilities; however, respondents are more concerned about the reliability of health care providers, their visits to health facilities are less frequent and 41 percent say that they would go to their neighbors and relatives in case of a sickness or an accident instead of a health professional. While access to health care appears to be better in Aweil, it is heavily dependent on the one government-international NGO (*Médecins Sans Frontières(MSF)/Doctors Without Borders*) hospital, which was visited by up to 62 percent of all respondents within a month of their interview.

### HEALTH FACILITY PRESENCE AND ACCESSIBILITY

There are 96 active government-supported health facilities in the former Juba County according to the county health department. Out of those, 33 receive support through the second phase of the HPF, including two hospitals (Juba Teaching Hospital and the Al Sabbah Children’s Hospital). In addition to the HPF facilities, there are several primary health care centers run by faith-based organizations or NGOs and an unknown number of private clinics and pharmacies that, unlike the government-run health centers, tend to respond to emergencies 24/7. Most interviewees agreed that Juba is sufficiently well covered in terms of the number of facilities and survey respondents were on average able to list eight health facilities from memory (one hospital, one health center/primary health care center, three private clinics and two pharmacies).

In Aweil, the health care landscape is simple and includes: the Aweil Civil Hospital, run jointly by the government and the *MSF*, an international NGO, three primary health care centers and several private clinics. Interviewees referred to the private clinics by the nationality of their management: Ethiopian, Ugandan, Chinese and one local clinic. None could recall a facility run by a church or faith-based organization. Survey respondents were on average able to identify five health facilities (the hospital, two private clinics and two pharmacies), but 68 percent were not able to recall a single health center or primary health care center. Although at least in some cases it is possible that respondents refer to primary health care centers as “hospitals, many specifically referred to the Aweil Civil Hospital and the “MSF (Médecins Sans Frontières) hospital.” As will be further discussed below, the Aweil Civil Hospital appears to dominate the health care sector in Aweil over other fully government-run facilities. This would greatly complicate any governance and complaints system should there ever be one as beneficiaries are unclear about who runs the facilities.

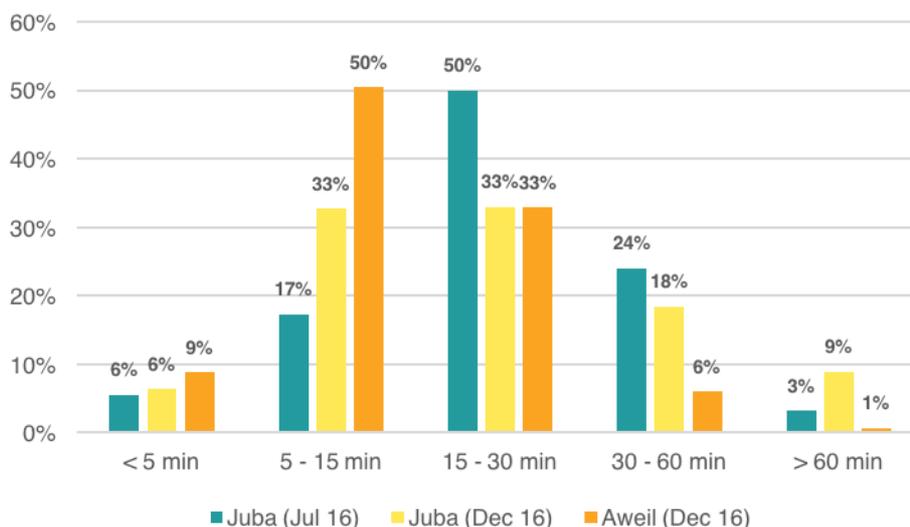
To gain an insight into the relative popularity of the government and alternative health care providers, respondents were asked to identify the facility they (or a member of their household) have last visited. Their answers are presented in Figure 4.1 and corroborate the information received in interviews: in Juba, respondents relied on a combination of hospitals, primary health care centers and private clinics, while in Aweil the hospital dominated. Faith-based clinics did not feature in either city. In Aweil, this is due to a genuine absence, while in Juba clinics run by religious organizations tend to be registered as primary health care centers and therefore identified as such.

**Figure 4.1. Last Visited Health Facility**

Where did you go last time you (or a household member) needed a medical treatment?	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Hospital	28%	35%	80%
PHCC	28%	27%	0%
PHCU	4%	1%	0%
Private clinic	36%	29%	12%
NGO/UN facility	0%	1%	4%
Faith-based clinic	1%	1%	0%
Pharmacy	0%	2%	2%

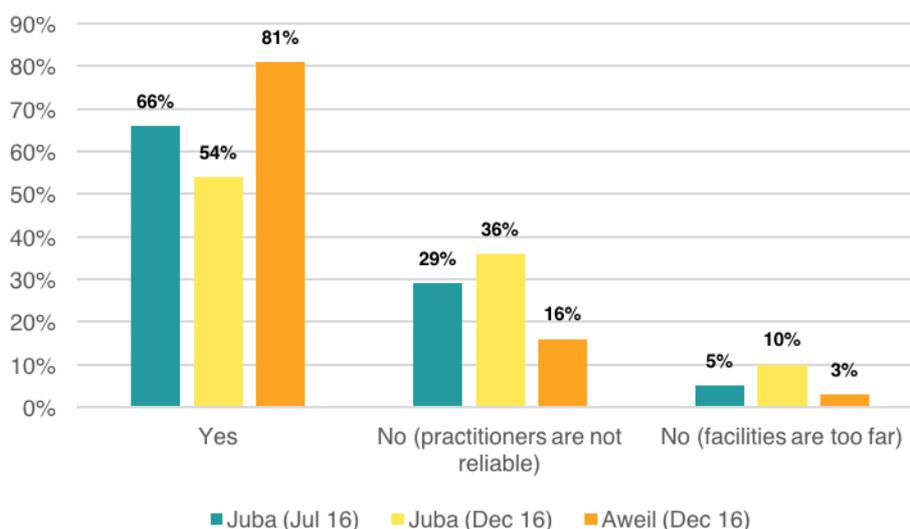
Respondents were also asked whether the facility they last visited was within walking distance. This was true for 79 percent of respondents in Juba and 60 percent of respondents in Aweil. In Juba, no particular type of facility was more likely to be described as being within walking distance than any other, while in Aweil, the hospital was more likely to be described as within walking time (63 percent) compared with the private clinics (42 percent). Figure 4.2 shows the average walking time for the facilities within the range. Similar to primary schools, most facilities are within half an hour walk.

**Figure 4.2. Walking Time to Health Facilities, Juba and Aweil**



As Figure 4.3 shows, patients in Aweil felt safer accessing health services and put more trust into health practitioners. This applied equally to those who visited the hospital and the private clinics. In Juba, those whose last visit was to the primary health care center were more likely to say that they did not trust health practitioners (46 percent) than those who visited either a hospital (36 percent) or a private clinic (26 percent).

**Figure 4.3. Perceptions of Safety in Relation to Health Care, Aweil and Juba**



A functional referral system between the different tiers of the health care system is another mark of accessible health care. This system is in place in Juba, in theory but not practice, with primary health care centers and hospitals lacking ambulances and fuel to transport patients. Instead of relying on the referral system, patients tend to practice “self-referral,” by choosing to go to the facility where they are most likely to get help. Respondents in Juba asked where they would go if they felt “unwell,” 14 percent say they would go to a hospital and 31 percent to a primary health care center, while in case of an accident, 34 percent would go directly to the hospital, and 15 percent to the primary health care center. As previously explained, most respondents in Aweil would choose to go to the main hospital for most of their needs.

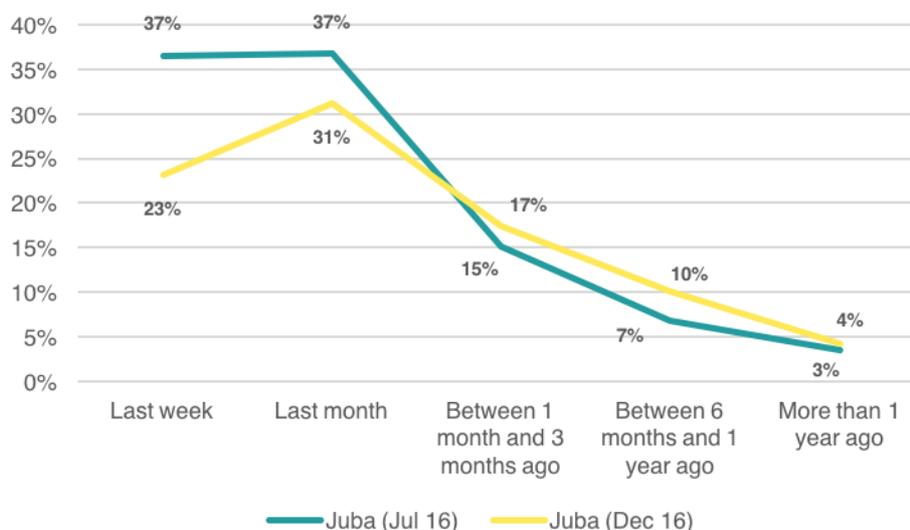
## ABILITY TO ACCESS HEALTH CARE

The income status of a patient’s household plays an important role when choosing between the government-run and private facilities:

- In Juba, the manager of the government-run primary health care center identified most patients as being local to the area, although the internally displaced persons from the Protection of Civilian sites with serious chronic conditions like tuberculosis or being HIV positive were said to also visit. The private clinic clients, on the other hand, were mostly visited by expatriates covered by international health insurance contracts or those able to afford the services.
- Households in Juba that earn a monthly income are less likely to go to a primary health care center, more likely to go to a private clinic, and equally likely to go to a hospital. Among households with incomes, those who last visited a private clinic have the highest average monthly income (SSP 3,724/US\$47), followed by those who last visited a hospital (SSP 3,443/US\$43), and finally a primary health care center (SSP 2,961/US\$37).
- In Aweil, households earning incomes are equally likely to go to the hospital or a private clinic, but the average monthly income of those who choose a private clinic was significantly higher (SSP 5,657/US\$70) than the incomes of those who choose the hospital (SSP 2,339/US\$29).
- Internally displaced persons in Juba are more likely to visit a primary health care center (56 percent compared with 27 percent of residents) and less likely to visit a hospital (22 versus 36 percent) or a private clinic (11 versus 29 percent). In Aweil, internally displaced persons and residents are equally likely to choose the hospital over a private clinic.

Most households in Aweil have a relatively recent experience of visiting a health care facility: 41 percent of respondents had visited one within one week prior to the interview, and 76 percent within a month prior. Out of all Aweil respondents, over half (62 percent) had visited the Aweil Civil Hospital within a month prior to the interview. As Figure 4.4 shows, the frequency of visits was lower in Juba, where 23 percent of respondents had visited a facility within a week prior to their interview in December 2016, and 54 percent within a month prior. The frequency of visits dropped between July and December 2016, most likely as a result of inflation and the economic deprivation experienced by a growing number of households, as well as the insecurity caused by the ongoing conflict.

**Figure 4.4. Timing of Most Recent Visit to Health Facility, Juba**

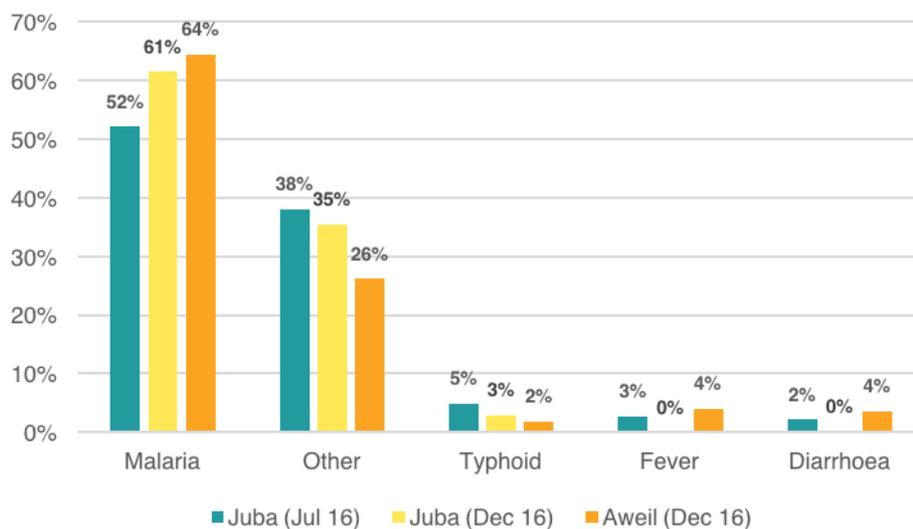


The reasons given for the last visit to a health facility are diverse, but malaria dominated in both cities and across health care providers. Patients in Juba are slightly more likely to go to a private clinic for malaria treatment (69 versus 56 percent across all providers), whereas in Aweil, no difference is found.

The incidence of individual medical issues is too diverse to draw definitive conclusions, but in Juba, a higher than average proportion of respondents with relatively common ailments, such as diarrhea, aches and pains, stomach ulcers, and typhoid—as well as cholera, and minor injuries, such as cuts and burns, last visited a primary health care center (figure 4.5). Many others with somewhat minor issues went to a hospital, as did many patients with more serious injuries, in need of surgery, and for all recorded births and deliveries, including antenatal and postnatal support. Those who visited private clinics did so for a range of medical issues, from minor ailments and injuries to pneumonia and broken legs, but not surgery. In Aweil, where primary health care centers are not popular according to the survey results, the hospital appears to service a full range of medical issues, but most who went to private clinics did so for common diseases and issues like malaria, cough, typhoid, and ulcers, or for a general check-up.

Since most of the survey questions are focused on recent health facility visits driven by the needs of the household over the prior year, respondents were asked if in the hypothetical scenario of an illness or an accident in their household, how and if they would seek help. Only 13 percent of respondents in Aweil say that they would not be able to seek help. In Juba, the share of households that would not seek help increased from 8 to 14 percent between July and December. In Juba, 41 percent would first seek assistance from neighbors or relatives, but in Aweil, 90 percent would go directly to the hospital. No difference is found in Juba between those who would and would not seek help, nor in the cost or types of provider, with regard to gender, age, ethnicity, or internal displacement status; there is, however, a marked difference based on income availability: only 29 percent of households without an income would seek help compared with 78 percent of those with an income.

**Figure 4.5. Reasons for Most Recent Visit to Health Facility, Juba and Aweil**



### 4.3 COST AND QUALITY OF BASIC HEALTH CARE

Although government and facilities funded by the HPF are on average less expensive than private clinics, survey results demonstrate that they both incur substantial expenses per visit on behalf of their patients. Although government-run facilities provide free treatment, patients often have to resort to buying missing medicines and equipment on the open market, which drives up the cost of health care. Private clinics are known to have better access to doctors and medicine, but even they suffer challenges to delivering quality health care.

#### COST OF SERVICE

Survey respondents were asked to specify how much money they had spent the last time they had visited a health care provider. Although much of health care provided in the government-run and HPF-supported facilities is supposed to be free, table 4.2 reveals that a visit to a health care facility tends to require substantial spending regardless of the provider.

**Table 4.2. Average Cost of a Visit to a Health Provider**

		Hospital		Primary Health Care Center	Private Clinic	
		Juba	Aweil	Juba	Aweil	Juba
Average spending— facility (SSP/US\$)	July	712/17		144/4		592/14
	Dec.	889/11	409/5	600/8	697/9	943/12
Average spending— transport (SSP/US\$)	July	18/0.4		2/0.05		6/0.15
	Dec.	25/0.6	21/0.3	10/0.13	29/0.4	10/0.13
Average spending on a visit as a share of average monthly income (%)	July	27		5		22
	Dec.	25	15	17	26	26

SSP = South Sudanese pound; US\$ = U.S. dollar.

Some observations on the average health care spending per visit in Juba and Aweil are:

- The average cost per visit is 80 percent higher in Juba than in Aweil, while the median cost is 33 percent higher (SSP 400/US\$5) than in Aweil (SSP 300/US\$4). The higher level of variation in the cost per visit in Juba is likely driven by the greater variety of providers compared with Aweil. The cost per visit can be as low as SSP 2—the routine charge for a consultation at a government-run facility (not consistently enforced)—or as high as SSP 12,000 (US\$150) at a hospital in Juba or 5,000 SSP (US\$63) at a hospital in Aweil.

- Private clinics are on average 70 percent more expensive than the hospital in Aweil and 57 percent more expensive than the primary health care centers in Juba, but only 6 percent more than government-run hospitals. Although treatment at government-run hospitals is free, the chronic shortages of basic medicine, medical equipment, and materials means that patients have to buy them on the open market. For the survey, this cost is counted as part of the cost of their last visit to a facility.
- In Juba, the average spending between July and December 2016 increased by 25 percent at hospitals and by 59 percent at private clinics.
- Malaria is the most frequently cited reason for seeking help at a facility. The average cost of being treated for malaria in Juba is almost the same at the hospital (SSP 857/US\$11) and a private clinic (SSP 900)—but 141 percent more than costs incurred at a primary health care center (SSP 364/US\$5). In Aweil, malaria treatment was 77 percent more expensive at a private clinic (SSP 694/US\$9) than the hospital (SSP 392/US\$5).

Table 4.3 summarizes information related to the incomes and expenditures of the health facilities visited in Juba and Aweil in December 2016. It reveals that:

- For nonprivate facilities, funding comes from a patchwork, including the Ministry of Health; NGOs; county implementing partners, including the meeting of payrolls; drugs received from the state-level ministry; their own sources, and a very small percentage generated by patient contributions. Private facilities exist completely outside of this system and secure 100 percent of the necessary funds by charging their patients.
- Government-run HPF-funded facilities are almost entirely cash free, with operating costs covered directly by the county implementing partner. This means that most patient spending occurs outside the facility on associated costs like privately sourced medications and hospitalization.
- There are significant discrepancies in medical staff salaries across different HPF-supported facilities, depending on whether staff members are on the government or the HPF payroll. This countrywide issue is not unique to Aweil and Juba. The NGO that is the HPF county implementing partner in Aweil is the only employer that continues to pay staff salaries in U.S. dollars rather than South Sudanese pounds.

## QUALITY OF SERVICE

During interviews, government officials and health professionals were asked which type of facility delivered the highest quality health care, and each gave a different answer. In fact, the only thing that they all agree on is that government-run primary health care facilities are not among the best quality health care providers.

According to the feedback, the best facilities are:

- Private clinics, because of their access to well-paid staff and other resources and because many are open at all times or respond to emergencies. However, this only applies to Juba; private clinics outside the city are poorly regulated and the service quality inconsistent.
- Religious facilities, because they maintain a higher standard of care, have staff who are invested and motivated, and have the trust of their patients.
- Facilities with significant support from an NGO, because of their access to funds, doctors, and drugs combined with the strict accountability requirements attached to their funding.

**Table 4.3. Financial Models of Health Facilities by Type**

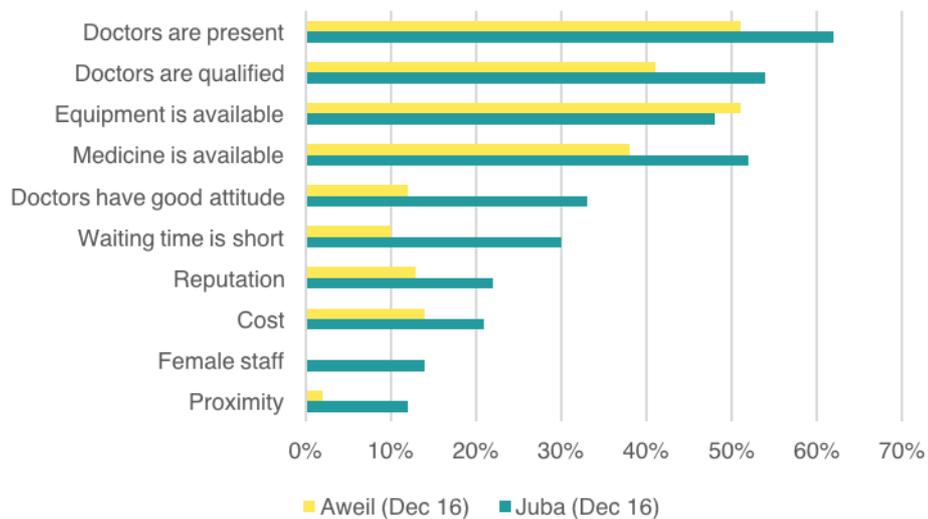
	JUBA			AWEIL
	Government	Religious	Private	Government
<b>Facility name</b>	<b>Kator Primary Health Care Center</b>	<b>Usratuna Primary Health Care Center</b>	<b>ECLAT</b>	<b>Primary Health Care Center</b>
<b>Source/s of funding</b>	Staff salaries covered by the Ministry of Health payroll; drugs and small equipment covered by the government No government funds to cover operating costs for past two years Small patient contribution	Funded through an international nongovernmental organization (not part of the Health Pooled Fund) Several staff positions on the Ministry of Health payroll Small patient contribution (contributes up to SSP 10,000 per month)	100 percent of funds obtained through fees charged to patients	Staff salaries paid directly by an international nongovernmental organization (a Health Pooled Fund county implementing partner); drugs and small equipment covered by the government No government funds to cover operating costs for past two years
<b>Average number of patients</b>	200/day (rainy season); 50–100/day (dry season)	2,528 in November 2016; 80/day (dry season)	50/week (Monday–Sunday)	200/day (rainy season); 100–120/day (dry season)
<b>Charge to patients</b>	SSP 2 for consultation; treatment is free; drugs are free if available	SSP 2 for consultation; SSP 5 for drugs; SSP 3 for other services	SSP 250 for consultation; SSP 350 for one test (malaria, typhoid, urine, and stool)	SSP 2 for consultation
<b>Staffing</b>	57 staff, including one doctor, six clinical officers, 11 nurses, and eight midwives (all South Sudanese)	Over 20 staff, including 5 clinical officers, 4 nurses, and 3 midwives (all South Sudanese)	Over eight staff people, including two doctors and two nurses (all technical staff foreign)	Eight staff people, including one midwife and two nurses (all South Sudanese)
<b>Expenses (monthly)</b>	Staff salaries paid in South Sudanese pounds based on the Ministry of Health payroll (SSP 488–800 per month) Patient contribution used to buy soap and water	Staff salaries paid in South Sudanese pounds (clinical officer is paid SSP 10,000) Operating costs (US\$4,000, not including drug procurement) covered by an international nongovernmental organization	Staff salaries paid in South Sudanese pounds SSP 80,000 in operating costs (including salaries) and SSP 30,000 for generator fuel Additional SSP 30,000–35,000 to stock the pharmacy	Staff salaries paid in U.S. dollars by the Health Pooled Fund county implementing partner (between US\$100 and 600)

SSP = South Sudanese pound; US\$ = U.S. dollar.

Survey respondents identify two hospitals as the best health care facilities in Juba: the government-run Juba Teaching Hospital, according to 34 percent of respondents; and the privately-run Juba Medical Complex, according to 18 percent of respondents. In Aweil, 63 percent of respondents named Aweil Civil Hospital as the best facility, but 31 percent named other private clinics in the city. The preference for government-run hospitals is interesting and appears to contradict the actual experience of respondents: 80 percent of respondents who had been to a private clinic say that their issue was solved compared with only 61 percent who visited a hospital in Juba or Aweil.

Figure 4.6 shows that the presence and availability of doctors, equipment, and medicine are the most important factors to respondents when evaluating the quality of a facility.

**Figure 4.6. What makes a health facility be considered the best?**



**STAFF AVAILABILITY AND QUALITY.** As with the education sector, staffing appears to be the single most important issue in determining the quality of service delivery in the health sector. The shortage of qualified South Sudanese medical staff is forcing NGOs and private clinics to rely on an expatriate workforce. Although the survey asked whether respondents interacted with a doctor during their last visit to a health facility, many appeared unable to distinguish between a doctor and a clinical officer.<sup>20</sup>

Medical staff on the government payroll operate in government-run facilities, including those that are HPF-supported and those that are not, as well as in some faith-based facilities that are registered as primary health care centers, comply with the government regulations, and are officially part of the government’s primary health care system. There is a higher proportion of government staff in the health facilities in Juba than in the rest of the country; few public officials are willing to serve in facilities outside Juba or other urban areas. All government-employed medical staff persons are South Sudanese; they are paid in the local currency and their salaries are relatively low and often delayed by several months. The staff is reportedly sufficiently skilled and qualified, but their motivation is hampered by their low and delayed compensation. The government introduced an “infection allowance” to supplement salaries for the medical staff and bring salaries closer to those employed by NGOs. Recruitment is done at the state level.

<sup>20</sup> Even though doctors are not present at most primary health care centers, 50 percent of respondents who had recently visited a center recalled speaking to one.

Medical staff employed by NGOs operate in government-run facilities that receive HPF support and in NGO-run facilities outside the HPF structure, including facilities run by faith-based organizations. The staff includes South Sudanese and expatriates, with their substantial salaries paid either in South Sudanese pounds or U.S. dollars. Salaries of all medical staff contracted by NGOs but working in government-run facilities under the HPF are harmonized to eliminate competition over medical staff among the implementing NGOs. In some areas, the county health department now processes the salaries of NGO-contracted staff working at government facilities in a move to gradually transfer the management of all medical staff at government-run facilities to the government. Recruitment is done directly by the NGOs. Attempts to harmonize government and NGO salaries, however, have not worked.

**Private clinics** tend to be owned by expatriate doctors and managers and employ significant numbers of expatriate medical staff. Although their salaries are relatively high, smaller clinics struggle to match salaries offered by some of the HPF-implementing NGOs. To attract experienced staff, they instead rely on offering benefits such as accommodations, transportation, and the opportunity to live in Juba rather than in a more rural area. Small local private clinics are often run as a side practice by South Sudanese doctors employed in government-run hospitals.

**DRUG AVAILABILITY AND QUALITY.** There are chronic shortages of available drugs and medical equipment in South Sudan. Government-run facilities supply drugs for free but experience frequent stock-outs. Drugs are usually available at private facilities, but unaffordable for the majority of households. Figure 4.7 illustrates the availability of drugs as reported by the respondents.

Government-run facilities are part of a centrally coordinated push system that delivers drugs to every facility every three months (see box 4.1 for a description of the centrally-run procurement system). If a primary health care center runs out of a particular drug before the three-month mark, it makes a request to the county health department, which checks the Ministry of Health stock and, subject to its availability, resupplies the drug. However, the availability of drugs is a function of resources provided for procurement as well as management and logistical capacity to allow for timely procurement and distribution—all of which are currently lacking in South Sudan. As a result, frequent and chronic shortages and stock-outs occur, not only of drugs but also basic equipment such as syringes and bandages.

NGO facilities operating independently of the HPF, including most faith-based clinics, employ a pull system by placing orders with local companies that import drugs from abroad against a payment in hard currency. This service is relatively expensive, but affordable for facilities funded with U.S. dollars.

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*“If you want good quality drugs, you need to buy them from Kenya or Uganda. Here, the quality is not good, patients keep coming back saying that this doesn’t work.”*

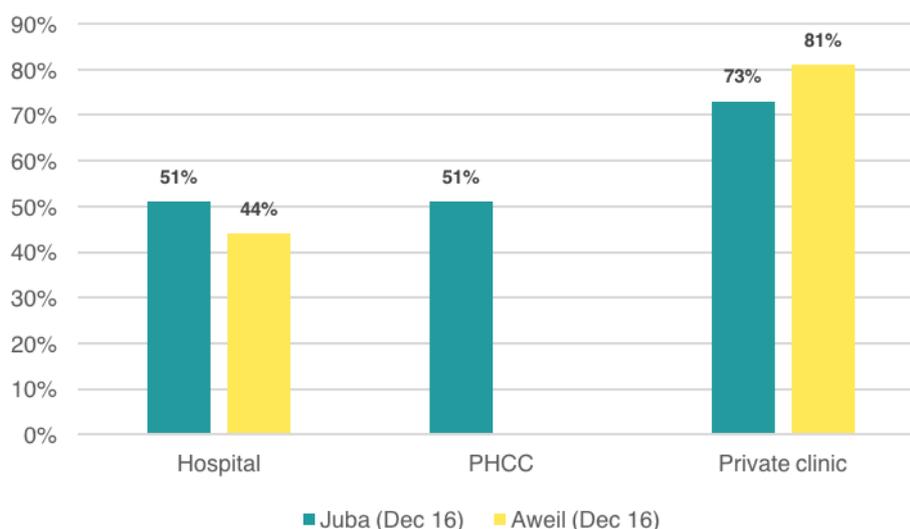
*Staff at a private clinic in Juba*

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Even small private clinics in Juba tend to be equipped with ultrasounds and x-ray machines imported from Kenya or Uganda. Most clinics also continue to procure their medicines from abroad using a pull system based on demand, however an increase in the customs tax forced some to start buying on the local market, where quality is significantly harder to control. Staff at the private clinic visited in Juba described what amounted to a trial and error system, whereby some drugs are taken out of circulation following patient complaints, in most cases regarding their perceived ineffectiveness.

Despite these procurement challenges, survey results confirm that drugs are more available at private clinics than at government-run facilities, which rely on the central drug procurement system.

**Figure 4.7. Availability of Drugs at Facilities, Juba and Aweil**



**WAITING TIMES** are significant at most government-run facilities, but they are not a significant concern for most patients, as previously explained. The shortest average waiting time in Juba is at a private clinic at a half hour, followed by Juba hospitals at 48 minutes, Juba primary health care centers at 63 minutes, and private clinics in Aweil at 78 minutes. As already discussed in this chapter, most respondents in Aweil choose to rely on the Aweil Civil Hospital where the average waiting time is a little over two hours. It is worth noting that the survey was conducted in December 2017, at the beginning of the dry season. According to the interviewed primary health care center managers, waiting times tend to double during the rainy season.

#### 4.4 ACCOUNTABILITY RELATIONSHIPS IN BASIC HEALTH CARE

##### SERVICE PROVIDERS AND THE GOVERNMENT

The three tiers of the Ministry of Health (national, state and county) are closely involved in the running of government-run facilities as well as those supported by the HPF and the Health Rapid Results Program. However, there is still a long way to go before the government is able to fully deliver health services without donor support. Two critical factors are still needed to enable the transfer of full responsibility for delivering health care to the government: the harmonization of the salaries for all medical staff and the total transfer of staff management to the county health departments, neither of which are likely to happen for some time. Key obstacles are financing—the budget allocation for health is minimal, and the uneven capacity of the county health departments, witnessed in the course of this study.

The county health department in Juba is staffed and knowledgeable about health care in the county, and the director was mentioned by name at visits to both primary health care centers—Kator and Usratuna. Primary health care center staff in Aweil say they have minimal interaction with the government, and no one was available to interview at the county health department. The Department of Public Health of the Municipal Council described itself as the main connection between health facilities and the Ministry of Health, even though HPF does not fall within its purview.

All primary health care centers and hospitals are required to feed a variety of data into the Health Management Information System by submitting the information to the county health department, which passes it to the state, which then passes it to the National Ministry of Health. Facilities that demonstrate performance issues are supposed to receive a quarterly inspection from a state-level inspector, and all HPF

facilities are supposed to be visited by the county health department at least once a month. In Juba, the manager of the government-run Kator primary health care center says that the county health department officials come to the facility every week, but at the NGO-managed, faith-based Usratuna center, they come once a quarter.

Compared with the regulations and supervision of government-run and NGO-supported facilities, oversight and regulation of private clinics is quite weak. Private clinics must register with the Ministry of Health and present diplomas of their medical staff; they are supposed to be visited by state officers once a year, but it is unclear how systematically this is taking place. In addition, staff persons at the visited private clinic in Juba say that the county health department officials come every few months to inspect the drug supply, but no data are submitted by them to the county health department. Some of the expatriate staff complain that they have not attended a single training or seminar in their eight years in Juba, and they do not have a clear understanding of the local regulations are, adhering instead to those they know of in Uganda.

### SERVICE PROVIDERS AND THE COMMUNITY

The government-run basic health care system has two built-in community-level accountability mechanisms: home health promoters, who are elected by the community, trained, and then channel community concerns to the government; and boma health committees, which are elected by the community to supervise individual health facilities.

The county health department provides anecdotal evidence of the effectiveness of a boma health committee in an area at the outskirts of Juba, but no staff members of the visited facilities made mention of home health promoters or boma health committees when asked about the models through which patients raise complaints. Patients at all four visited facilities in Aweil and Juba are said to complain directly to the facility doctors and management.

### COMPLAINT MECHANISMS

In Juba, health is the second most complained about sector after water with 7 percent of respondents having had a direct experience making a complaint. In Aweil, complaints were more common among respondents compared with Juba (at 20 percent). However, complaints about health are thought to be the least effective in terms of getting a response compared with water and education, with only 31 percent of respondents in July 2016 finding them effective, and 22 percent in December. In Aweil, 30 percent find it effective to make a complaint. Respondents were asked who they would approach if they decided to raise a complaint. Table 16 summarizes the responses. The proportion of respondents in Juba who would complain directly to a health facility also declined after the conflict, but most respondents there feel that there is no entity to register a complaint to. In Aweil, on the other hand, 74 percent of respondents feel comfortable making a complaint at a health facility—in most cases, this would mean the Aweil Civil Hospital as it is the most frequently visited.

**Table 4.4. Where would you go to complain about a service?**

	HEALTH		
	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Local government	3%	18%	17%
Community leaders	0%	4%	5%
NGO	3%	1%	3%
Health facility (directly)	74%	37%	18%
Boma Health Committee	3%	11%	7%
Nowhere to go	7%	40%	59%
Don't know	13%	13%	39%

## 5. WATER UTILITIES



Photo 5.1. Water trucks in Juba fill up with river water

### 5.1 WATER DELIVERY MODELS IN URBAN AREAS

There is limited to no support to water utilities from government or national-level, donor-funded support models for urban water. The service delivery gaps are filled with private and community self-help models. The four primary models of water delivery are urban utilities, private utilities, boreholes and shallow wells, and direct river water.

#### ROLE OF GOVERNMENT

- The national-level Ministry of Electricity, Dams, Irrigation and Water Resources directly manages and funds the SSUWC— South Sudan Urban Water Corporation—which is active in Juba.
- The county water department is charged with monitoring and rehabilitating boreholes, constructing shallow and spring wells, and promoting hygiene in the areas under its responsibility, including urban areas.
- The county water department in Juba has two operations and maintenance teams whose role is to regularly check borehole infrastructure, chlorinate all boreholes every three months, and make repairs when needed equipment and spare parts are available. The department however often lacks the funding to fully carry out its role.
- In Aweil, the role of the municipal council water department is to take care of urban water sources, but at the time of this writing, like the county water department in Juba, it does not receive funds from the government to carry out essential repairs.

## ROLE OF ALTERNATIVE DELIVERY MODELS

- Alternative service delivery include a privately operated water treatment plant in Juba, municipality-owned utility companies set up through external funding and assistance, and private distribution networks of water trucks, kiosks, and other delivery models.
- Municipal water utilities represent a potential medium-scale alternative to utilities run by the national government, but most are situated in Greater Equatoria, where the ongoing insecurity negatively impacts their operations. For security reasons, municipal water utilities could not be included in this research; however, their operations are briefly described in box 5.1.
- The government currently plays a very limited role in alternative delivery models for water in Juba: the Ministry of Electricity, Dams, Irrigation, and Water Resources sets the prices for water charged by the private treatment plant, and the city council registers the private water trucks. There is no known role for government in Aweil. Given the lack of access to treated water in both cities, there is a potential for government involvement in monitoring the quality of water that is distributed by alternative providers.

## FUNDING MECHANISMS

- Access to water is not supported through a large-scale donor-funded mechanism like those in the education and health sector. However, the United Nations Central Emergency Response Fund provided US\$25.4 million in humanitarian support to the water, sanitation and hygiene (WASH) sector from 2014 to 2017 (UNOCHA 2017b). The largest single ongoing investment is the Japan International Cooperation Agency initiative to build a new water treatment plant with extended distribution in Juba at a cost of US\$48 million. The investment was suspended in the aftermath of the July 2016 conflict in Juba.
- The government funds the operating costs and payroll of the Ministry of Electricity, Dams, Irrigation, and Water Resources; the county water department; and the SSUWC. At the time of this writing, no funds were released for repairs and maintenance of the SSUWC treatment plants or the boreholes and wells in the two cities.
- The maintenance of SSUWC water treatment plants is funded through the small tariff charged to households connected to the distribution network and the revenue raised by charging privately operated water trucks for filling up at the treatment plant. According to SSUWC management in Juba, this revenue is only covers minor repairs and general upkeep of the existing infrastructure.
- Water testing kits, chlorine, spare parts, maintenance equipment, solar panels, and other materials needed by county water departments to maintain city boreholes, taps, and wells are donated by the United Nations Children's Fund (UNICEF) and nongovernmental organizations to both cities. According to the Juba county water department and the Aweil municipal council, supplies frequently run out, leaving the relevant departments unable to conduct repairs.

Table 5.1 lists all the sources of water currently available to urban households in South Sudan.

**Table 5.1. Water Delivery Models**

SOURCE	DESCRIPTION
<p>Urban utilities (SSUWC, municipal utility)</p>	<p>South Sudan Urban Water Corporation (SSUWC) is a government utility managed by the Ministry of Electricity, Dams, Irrigation, and Water Resources. It operates small- to medium-sized water treatment plants in six urban centers across the country: Bor, Juba, Malakal, Maridi, Renk, and Wau. At the time of this writing, the Juba and Wau plants were operating at full capacity and the remaining ones at partial capacity. All plants draw on river or surface water and pump treated water into a limited pipeline distribution network. In some areas, water is redistributed by private water trucks.</p> <p>Local utilities owned by the local municipal councils were set up by GIZ, the German development agency, in the three small towns of Yei, Torit, and Yambio. At each location, the installation consists of a water source (boreholes or treatment facility) adapted to local conditions and a limited piped distribution network connected to kiosks; water truck filling stations; and, in some areas, individual households.</p>
<p>Private utility</p>	<p>As a result of foreign investment, a relatively small privately operated water treatment plant opened in Juba at the beginning of 2016. The plant is not attached to a distribution network, but rather distributes water directly to privately operated tankers. There are no other privately operated water treatments plants in the country.</p>
<p>Boreholes, shallow and spring wells</p>	<p>Boreholes, shallow wells, and spring wells are widely present in most towns, which compensates for the limited capacity or complete absence of a water treatment plant. They are the only available water source for households that cannot afford to purchase water from a utility.</p>
<p>River water</p>	<p>Untreated river water continues to represent an important water source for households in most cities, including Juba. Previous attempts to ban water trucks from supplying river water in Juba failed when the city council was unable to come up with an alternative water source to compensate for the decrease in supply.</p>

SSUWC = South Sudan Urban Water Corporation.

### Box 5.1. Alternative Utility Delivery Models: Municipal Utilities and Cooperatives

Among the utility-focused alternative delivery models in South Sudan identified in the initial stages of this research, two of the most interesting are: (1) the water utility companies owned by the municipal councils and set up by GIZ in Yei, Torit, and Yambio; and (2) the National Rural Electric Association cooperatives in Yei, Kapoeta, and Maridi.

For this reason, Yei, in the former Central Equatoria, was selected to be one of this study's fieldwork locations for the first half of 2016. Unfortunately, only several days before the research team was due to travel to the location, the July 2016 conflict erupted—first in Juba and then in Yei, which became one of the hardest hit areas. By December 2016, insecurity had spread across Greater Equatoria, and Yei was replaced with Aweil as the focus of this study. Although the fieldwork did not cover the municipal utility or the cooperatives, a brief description of each of these is presented below.

**Development of the urban water and sanitation sector (2014–17).** GIZ sought to bring treated water to three small towns in South Sudan while paying special attention to the provisions for service delivery under the 2009 Local Government Act.

- In each city, GIZ worked with KfW, the German development bank, to put in place a water source (borehole or surface water treatment facility); a small piped distribution network connected to kiosks; water truck filling stations; and, in some areas, connections to individual households.
- A water utility was created to manage the water delivery system. Each utility is owned by the municipal council but managed by a board that includes GIZ. The governance arrangements put in place by GIZ facilitated the KfW investment in the water treatment infrastructure and distribution network.
- The kiosks and water trucks were operated by private service providers contracted to resell water at fixed prices. Regularly commissioned studies were used to determine the price at which the water remained affordable but the facility achieved cost coverage.

**South Sudan Rural Electrification Project (2005–08) and Electrification Sustainability Program in South Sudan (2013–16).** With the assistance of the United States Agency for International Development (USAID) and Norway, the National Rural Electric Association developed three self-sustaining municipal electric cooperatives:

- Three small generator-based power plants were set up with USAID funding in Yei (1.2 megawatt), Kapoeta (0.8 megawatt), and Maridi (0.8 megawatt).
- The Yei power plant served approximately 1,200 customers; the plants in Kapoeta and Maridi served 650 customers each, including households, businesses, nongovernmental organizations, and public offices.
- Each utility was set up as a customer-owned and locally managed entity. All three cooperatives were able to achieve cost coverage before having to shut down due to insecurity in the targeted areas in 2015 and 2016.

## 5.2 ACCESS, COST, AND QUALITY OF WATER

Table 5.2 summarizes how water is accessed in Juba and Aweil based on results from the December survey. It concentrates on the dominant means of getting water in each city. In Juba, 63 percent of households have water delivered to their homes, 16 percent fetch it for themselves, and 21 percent rely on a combination of the two. In total, 78 percent of households pay for water trucks to deliver water to their homes, including households that say they rely solely on water delivery and households that complement their water intake by fetching it at the source. In Aweil, 91 percent of the households fetch their own water; 8 percent have it delivered, and only one surveyed household relies on both.

### ACCESS TO WATER

#### Access to Water in Juba

The two major sources of household water in Juba are: (1) boreholes and wells connected to small water networks and public water taps and (2) the White Nile river. The river water is consumed either directly or

processed by one of the two active water treatment plants: the government-run SSUWC or a privately run plant. Both water treatment plants sell the treated river water to privately owned water trucks that distribute it across the city. The SSUWC is also connected to and maintains a small piped distribution network. Water trucks resell treated and untreated water, the latter pumped directly from the river with the help of a small generator.

In theory, the SSUWC can produce enough water to supply 23 percent of Juba's population, but as table 5.2 reveals, its reach among surveyed households is much more limited.<sup>21</sup> Although 77 percent of surveyed households in Juba have their water delivered by water trucks, only 14 percent of it comes from a treatment plant. And while, on paper, 3,800 households are connected to SSUWC's piped network, this is only the case for six households in the survey sample.

The water treatment plant does not always operate at full capacity due to fuel and chemical shortages and frequent breakages, forcing water delivery trucks to wait in lines at the filling station. Fuel shortages also affect the privately managed water plant, which was closed for four days in December 2016 while research for this report was being conducted. In terms of the physical reach of the SSUWC water network, only the oldest districts of Juba (Atlabara, Nimra Talata, and Hai Jalaba) (where a large proportion of government staff households live), businesses and public offices, are connected to the piped distribution network. The rest of the city relies on water trucks, which are not always willing to come to remote neighborhoods such as Gudele because of the high cost of fuel. For those areas of Juba, boreholes, wells, and river water are the only alternatives.

Income plays a role in household's ability to obtain water. Having an earned income increases the probability of having water directly delivered to a household by 12 percent. Level of educational attainment is another strong determinant of access to water. Among households with incomes, the average monthly income of those that have water delivered on a truck is over three times that of those fetching water from taps and the river (SSP 4,858 versus SSP 1,364 in December). Only income and education affect water delivery; no differences are found regarding ethnicity or internal displacement status. However, internally displaced persons are more likely to have water delivered from the river than from a treatment plant. Among households that rely on water trucks, those who have water delivered from a treatment plant have incomes twice as large as those who it delivered from the river (SSP 7,878 versus SSP 3,765). In both July and December 2017, only half of the respondents in Juba said that they were able to get enough water to cover all their needs; and the share varied significantly along ethnic lines, with Bari and Latuko households being above average and Dinka households being below 50 percent.

### **Access to Water in Aweil**

To access water, Aweil relies on boreholes connected to a small distribution network consisting of seven cisterns and 12 hand pumps. The pumps are powered with donated solar panels, but according to the municipal council's water department, they are not being maintained due to a lack of funds and spare parts. As a result, 91 percent of households fetch water from boreholes, wells, and hand pumps; and many homes have hand-dug shallow wells in their backyards because water can be found as close as 2.5 meters from the surface in Aweil.

There are no water trucks or water kiosks in the Aweil—water is delivered on carts and bicycles or carried by porters. Only 8 percent of households in Aweil pay others to deliver water, and their average incomes are more than double those who carry their own (SSP 5,746 versus SSP 2,400). Likely a result of the abundance of surface water, 95 percent of respondents say they have access to enough water. The quality of that water is, however, a concern, as explained in the following section.

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<sup>21</sup> The percentage estimate is based on calculations of the director of the South Sudan Urban Water Corporation (SSUWC) during the interview: assuming the population of Juba is one million and each person needs 30 cubic meters of water per day, the city as a whole consumes 30,000 cubic meters of water per day. The SSUWC plant in Juba has the capacity to produce up to 7,000 cubic meters of water per day.

**Table 5.2. Means of Accessing Water, June and December 2016**

	JUBA						AWEIL
	Water Truck <sup>a</sup>		Hand Pump		River		Hand Pump
	June 2016	December 2016	June 2016	December 2016	June 2016	December 2016	
Surveved households.	75 (304 households)	78 (317 households)	16 (66 households)	22 (88 households)	11 (44 households)	12 (50 households)	75 (315 households)
Source of water	River (67) Borehole (17) Treatment plant (15)	River (66) Borehole (20) Treatment plant (14)	<i>Fetchd directly from hand pump</i>	<i>Fetchd directly from hand pump</i>	<i>Fetchd directly from river</i>	<i>Fetchd directly from river</i>	<i>Fetchd directly from hand pump</i>
Average consumption	5.5 drums per week (about 1,100/liter)	4.8 drums per week (about 960/liter)	8.3 jerrycans per week (about 166/liter)	7 jerrycans per week (about 140/liter)	6.6 jerrycans per week (about 132/liter)	5 jerrycans per week (about 100/liter)	10.5 jerrycans per week (about 210/liter)
Mode of payment	Per drum (99)	Per drum (94)	For free (37) Per jerrycan (42)	For free (56) Per jerrycan (31)	n/a	n/a	For free (64) Fee to water user committee (32)
Average cost	26.1 per drum	54 per drum	1.2 per jerrycan	2.5 per jerrycan	n/a	n/a	n/a
Average monthly water budget (total)	SSP 584; 22% of average household monthly income	SSP 1,038; 28% of average household monthly income	SSP 270; 10% of average household monthly income	SSP 383; 10% of average household monthly income	n/a	n/a	32; 1% of average household monthly income
Do treat the water	43	43	36	23	41	46	34
Treatment methods	73% with chlorine 17% with PUR 8% with aqua tabs	67% with chlorine 21% with aqua tabs 5% with PUR	67% with chlorine 25% with PUR	55% with chlorine 20% with aqua tabs 15% with PUR	78% with chlorine 11% with PUR	74% with chlorine 13% with aqua tabs	50% filter with cloth 29% with chlorine 13% with aqua tabs
Enough water	Yes: 45%	Yes: 47 %	Yes: 53%	Yes: 40%	Yes: 39%	Yes: 34%	Yes: 95%

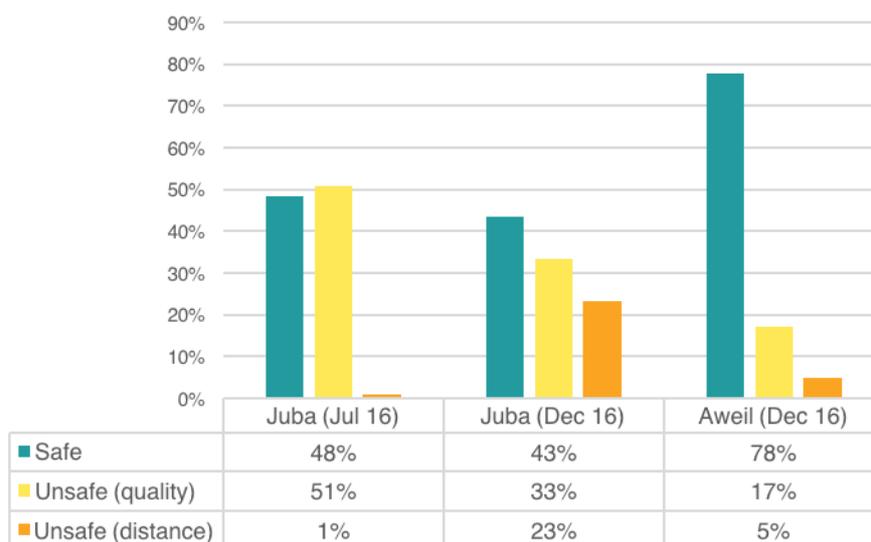
SSP = South Sudanese pound; US\$ = U.S. dollar.

a. Note that the percent of surveyed household refers to the households who get at least some of their water delivered by water truck. Among these, 61 percent have their water exclusively delivered by water truck (in both July and December).

### Perceptions of safety

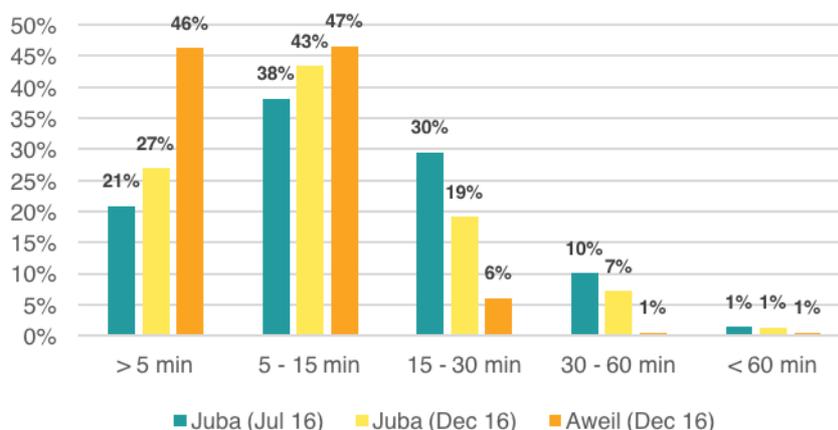
As figure 5.1 shows, respondents in Aweil feel safer getting water than respondents in Juba, even though most fetch their own. In Juba, concerns among respondents shifted from the quality of water to the distance household members have to travel to get to it.

**Figure 5.1. Perceptions of Safety in Relation to Water Access and Quality, Juba and Aweil**



As security concerns grew in Juba between July and December 2016 due to the ongoing conflict, distances travelled to water points among those who fetch their own shortened (figure 4.9). In Aweil, water sources are significantly closer, with 46 percent of households less than five minutes away from a water point. Water is fetched exclusively by women in Aweil in 86 percent of households, and 29 percent of those who fetch water are under 16 years of age. In Juba, rate of households where only women fetch water decreased from 77 percent in July to 56 percent in December, and the proportion of households where both men and women participate went up from 21 percent to 36 percent, possibly as a result of the worsened security situation and concerns over women’s safety because of the conflict.

**Figure 5.2. Distance to Water Source, Juba and Aweil**



## COST AND QUALITY OF WATER

Water is significantly more expensive in Juba, where most respondents pay for water truck delivery, than in Aweil, where the most common charge is a small monthly payment to a local maintenance committee. However, all of the water is untreated and likely contaminated, hampering the accessibility of water in Aweil.

### Cost of delivered water in Juba

As shown in table 5.2, the average reported cost of water delivered by a water truck is SSP 54 per drum (200 liters). The SSUWC sells treated water to water truck drivers for SSP 5 per drum and interviewed resellers confirm that the standard charge for a drum of delivered treated water is SSP 50, although this can vary depending on the distance that the truck travels from the treatment plant to the household. To access untreated river water, water truck owners pay a fee to owners of small private generators that fuel the water pumps on the river bank (see photo 5.1). The standard charge for a drum of river water is supposed to be SSP 25, but there are reports that treated and river water are often resold for the same price.

The SSUWC has not installed any meters as part of its piped distribution network and therefore charges all connected households a flat fee of SSP 30 per month regardless of their consumption levels. In an interview, the manager of the SSUWC pointed out that the fee is difficult to collect and is ignored by many households who know that their water access will not be cut. He estimated that 50–60 percent of treated water currently produced by the SSUWC plant in Juba is nonrevenue producing water.

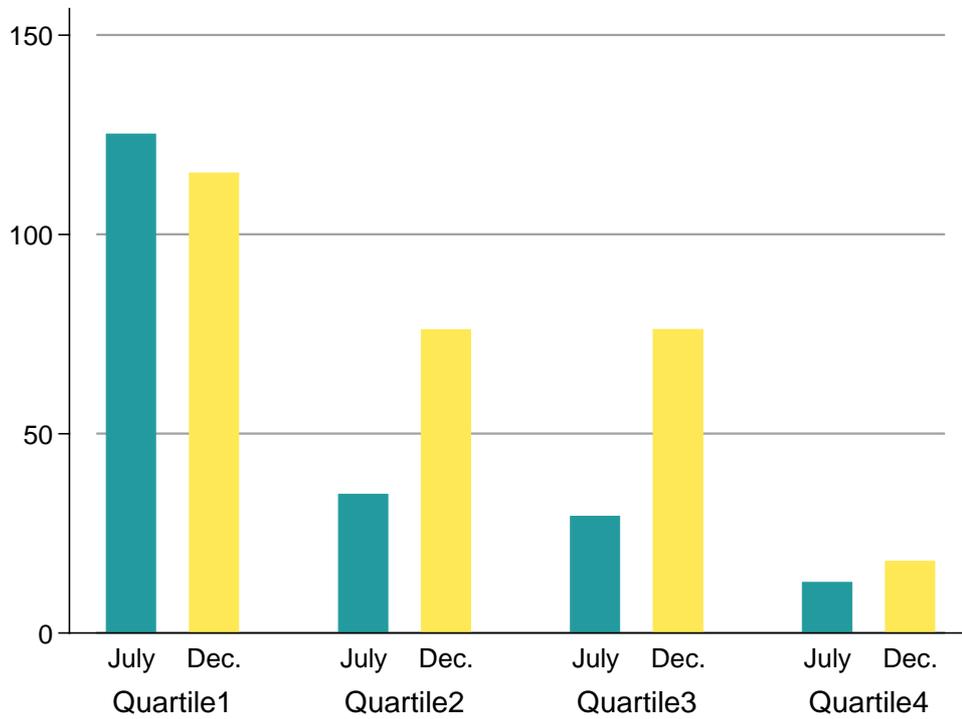
Figure 5.3 shows the percentage share of income spent on water by income quintiles in Juba. The poorest spent approximately 120 percent of their income on water and this percentage drops the higher the income.

### Cost of water from wells and boreholes in Aweil and Juba

In Juba, over half (56 percent) of the respondents who got their water from a borehole did so for free; all others paid an average of SSP 2.5 per jerrycan to the owner of the water tap or to the local maintenance committee. As previously mentioned, 91 percent of Aweil respondents get their water from a water tap attached to a well or a borehole, and 64 percent of them get it for free. It appears rare to pay per jerrycan in Aweil, but 32 percent of respondents paid their local water user committee an average of SSP 32 per month. A few resellers who operate in the market in Aweil buy a 200-liter drum of water from the owner of the borehole or water tap for SSP 10 and resell it for a price agreed on with the final customer. In December 2016, the market price was SSP 36.

In Juba, the cost of one drum of water doubled from July to December 2016 while household consumption remained the same. The very poor were already consuming a large portion of their incomes on water drums. Those in the middle of the income distribution have been most affected by the price increase.

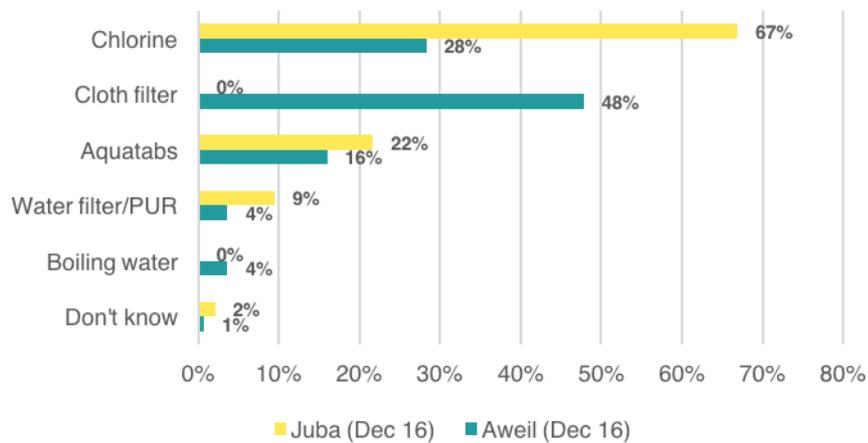
**Figure 5.3. Share of Income Spent on Water Drums in Juba, by Income Quartiles**



### Water Quality

Only **35 percent of respondents in Aweil** and **36 percent in Juba** treat their water to make sure that it is safe to drink and, methods that are used do not guarantee potable water. Figure 5.4 breaks down the different means of treating water encountered in the survey.

**Figure 5.4. Water Treatment Methods, Juba and Aweil**



- **Chlorine.** Most wells and boreholes are treated with chlorine, if available. Individual households also use it.
- **Filter cloth.** A basic homemade device to filter out physical impurities. Only used in Aweil.
- **Aqua tabs.** Commonly-used water purification tablets.
- **Water filters.** PUR brand filters were most commonly mentioned. Imported small filter systems that are either installed directly on the kitchen water tap or used for table water.
- **Boiling.** Relatively few households in Aweil and Juba treat the water by boiling it due to the high cost of fuel.

In Juba, water treated by the SSUWC and private treatment plants is classified as potable. In addition, the county water department chlorinates all boreholes immediately after construction and then periodically every three months; and the water is tested annually. It was not possible to independently verify that this does in fact take place on schedule, but according to the county water department the water sourced from the treatment plants and from boreholes in Juba is of sufficiently good quality. This, of course, does not apply to water taken directly from the river.

The water department in Aweil lacks the necessary equipment for regular testing of water. According to the director, the boreholes in the city were tested once, after testing devices were donated by UNICEF, and all were found to be contaminated. Since the department does not have resources to fund regular chlorination, nothing was done. Some respondents also described water in the city as “contaminated” and “not clean,” including the surface water drawn by locals from the shallow hand-dug wells.

### 5.3 ACCOUNTABILITY MECHANISMS

#### SERVICE PROVIDERS AND THE GOVERNMENT

Although there are some nongovernment water providers in Juba and Aweil, including the private water treatment plant in Juba, the water truck drivers, and owners and operators of privately owned boreholes and wells, this study did not uncover any structured interaction between alternative service providers and the county water departments or any system for inspections.

The county water department limits itself to inspecting the infrastructure for which it is directly responsible. Per the department director, each week, the operations and maintenance team inspects boreholes and wells in one payam of Juba and makes note of needed repairs. The water department in Aweil does not have such a system; it also does not appear to have spare parts or equipment to fix any breakages or address maintenance issues. The Ministry of Electricity, Dams, Irrigation, and Water Resources in Juba is active on one issue: the regulation of water prices. It sets the prices charged by the SSUWC, it negotiates the prices charged by the foreign-owned private treatment plant, and it even intervenes in conflicts over water prices between the water truck owners and the owners of small generators that pump untreated water from the Nile River.

#### SERVICE PROVIDERS AND THE COMMUNITY

Juba and Aweil have active local-level water user committees that were set up to manage individual water sources. In some cases, a committee collects a small regular monthly fee from neighborhood households; others do this on an ad hoc basis when a water tap needs repair and the county water department is out of the needed spare parts. However, according to the county water departments in Juba and Aweil, rather than raising a complaint through the water user committee, local residents often turn up at the government offices to register their issues with a specific facility or, in the case of Aweil, to complain about the generally deficient quality of water available in the city, especially during the rainy season.

## COMPLAINT MECHANISMS

In Juba, most respondents had scant direct experience of making complaints about water (10 percent had personally filed a complaint when asked in December 2016). In Aweil, complaints about water were more common (24 percent). The perception of effectiveness of complaints about water, like that of other services, dropped significantly between July, when 69 percent of respondents saw them as effective, and December, when only 32 percent did, signaling an overall loss of faith in the ability of government institutions to respond. Perceptions of the effectiveness of registering a complaint in Aweil match those of Juba in December: 45 percent say that complaints about water are effective. Table 5.3 shows the relative popularity of various complaint mechanisms, with an increase of 31 percent in Juba among those who “did not know” where to complain between July and December 2016.

**Table 5.3. Where would you go to complain about a service?**

	WATER		
	Juba (Jul 16)	Juba (Dec 16)	Aweil (Dec 16)
Local government	16%	14%	16%
Community leaders	20%	12%	5%
NGO	1%	2%	4%
Water User Committee	21%	14%	33%
Nowhere to go	51%	59%	23%
Don't know	9%	40%	25%

## 6. ELECTRIC UTILITIES

### 6.1 ELECTRICITY DELIVERY MECHANISMS IN URBAN AREAS

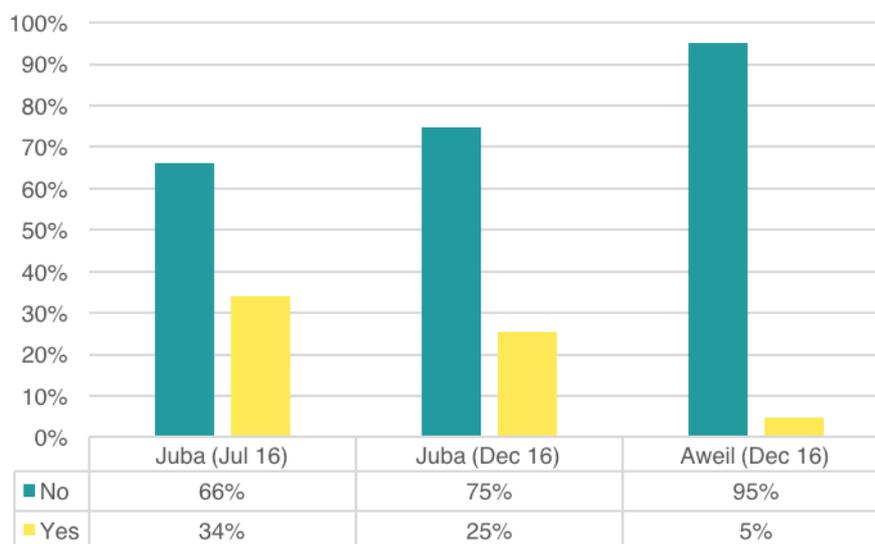
At the time of this writing, the government did not supply electricity to any of the urban centers in South Sudan. Households identified as having access to electricity procured it by their own means or with the help of neighbors.

- The national-level Ministry of Electricity, Dams, Irrigation, and Water Resources manages and funds the urban electric utility company—South Sudan Electricity Corporation, or SSEC. The SSEC branch in Juba ceased operations in July 2015 due to persistent fuel shortages, and no other branches were in operation at the time of this writing.
- Electric cooperatives set up in Yei, Kapoeta, and Maridi represent the only identified alternative service delivery mechanism (see box 5.1). Together with the municipal water utilities, the cooperatives could not be included in this research for security reasons; and the last operating cooperative, which was in Yei, ceased operations in December 2016.

### 6.2 ACCESS AND COST OF ELECTRICITY

With the SSEC now defunct, there is nothing in Juba or Aweil that could be called an alternative or even a public electricity delivery mechanism. In December, one quarter of respondents in Juba could access electricity in their home compared with one third in July—a result of the conflict. In Aweil, only 5 percent of interviewed households had access (figure 6.1).

**Figure 6.1. Access to Electricity at the Household Level, Juba and Aweil**

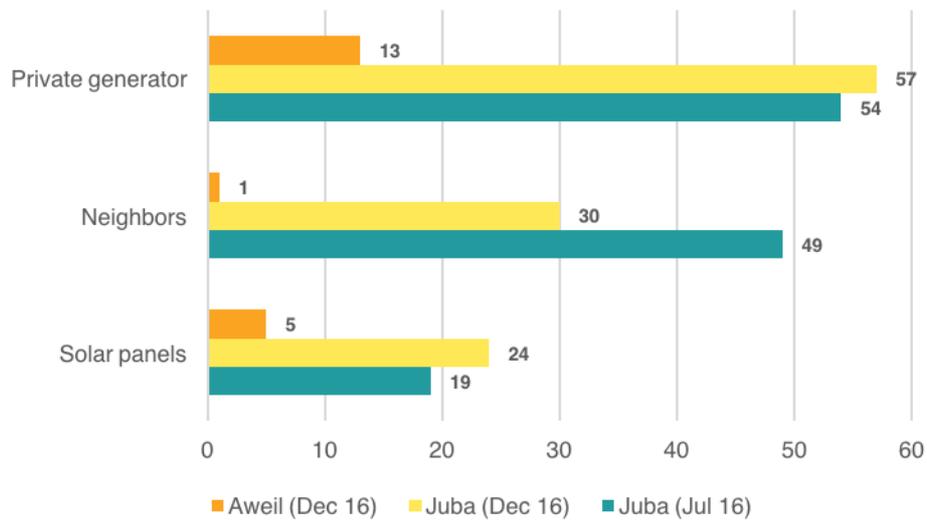


Those that do have access to electricity procure it individually at the household level, either by running a small private generator or with solar panels. Sometimes, several neighboring compounds will pool their resources and invest jointly. Figure 6.2 summarizes the different means of accessing electricity, referring to the actual number of households rather than proportions due to the low frequencies.

Availability of income and education attainment significantly increases the probability of a household having electricity in Juba in July, but this effect drops in December 2016. Of the households not earning an income in December, only 4 percent had access to electricity in their homes compared with 29 percent with a monthly

income. Households with no incomes were particularly affected by the crisis: the share of households without income but with access to electricity dropped from 35 to 4 percent. Juba households with monthly incomes and access to electricity have an average monthly income that is 71 percent higher than households without electricity. Compiling the two Juba surveys, no discrimination in terms of access is found along ethnic lines, but a male-headed household is significantly more likely to have access to electricity through a neighbor than a female-headed household. The probability for internally displaced persons to be connected through their neighbors is significantly lower still.

**Figure 6.2. Source of Electricity by Number of Households, Juba and Aweil (multiple choice, n=252)**



The average cost of having electricity at home is SSP 870 (US\$11) per month. To run a generator, a household spends an average of SSP 1,187 (US\$15) per month; the cost of connecting to a neighbor’s supply is SSP 620 (US\$8), and solar panels incur no operating costs in at least half of the cases, and an average of SSP 500 per month for the remainder. No significant difference is found in prices between Aweil and Juba, which is unlike all of the other services examined for this report. The cost of accessing electricity through a neighbor increased by 67 percent between July and December, and likely explains the drop in connection rates in Juba.

Only seven households in Juba and none in Aweil have continuous access to electricity. Private generators run for an average of seven hours in Juba and 3.2 hours in Aweil; connecting to a neighbor’s source provides electricity for 4.5 hours; and solar panels work during daylight hours in Juba—about 11 hours.

### 6.3 ACCOUNTABILITY MECHANISMS

In the absence of electricity providers—government or alternative—there are no accountability mechanisms in place to facilitate the relationship between electricity providers and the government. In addition, no accountability mechanisms involving the community and electricity providers are detected.

No conclusive data was collected on complaint mechanisms with respect to electricity—all interviewed households facilitate their own access to electricity, which led to a high nonresponse rate regarding the complaint mechanism.

## 7. IMPACT OF CONFLICT ON SERVICE DELIVERY

As explained in detail in appendix A: Methodology, fieldwork was conducted in Juba in two waves: in July 2016, immediately before the conflict, and in December 2016, six months after the conflict. This section analyzes the impact of the July 2016 conflict on household and service delivery in the four targeted sectors by comparing the two datasets and drawing on discussions with service providers on the impact of the conflict in December 2016.

Following the July 2016 violence, living conditions of households residing in Juba and other affected areas are seriously challenged. These communities had no other choice than to adapt their choices to minimize the impact of violent shocks on their lives. Households sharing their homes with a displaced family increased by 10 percent between July and December 2016. The probability of a household earning income decreased by 5 percent and the number of household members that contributed to the household income increased on average by 14 percent. Salaries were more likely given in kind than cash compared with July.<sup>22</sup>

### 7.1 CONFLICT AND PRIMARY EDUCATION IN JUBA

**ENROLLMENT** The July 2016 conflict did not significantly affect enrollment rates among primary school-aged children in Juba:

- In July 83 percent of children in surveyed households were enrolled in primary education and 78 percent were enrolled in primary school in Juba. In December, the enrollment rate was 84 percent overall and 81 percent in schools in Juba. Majority of children (98 percent) in the households surveyed in December went to the same school before and after the crisis and only three children had to change schools because their old school shut down.
- The survey only captured enrollment among children who remained in Juba after the conflict. According to the headmasters of four schools visited in December, between 20 and 30 students had left each school, mostly for refugee camps in Uganda. Each school also admitted 20 to 30 new students from Yei, Morobo and other areas outside of Juba where schools had shut down as a result of continued insecurity.

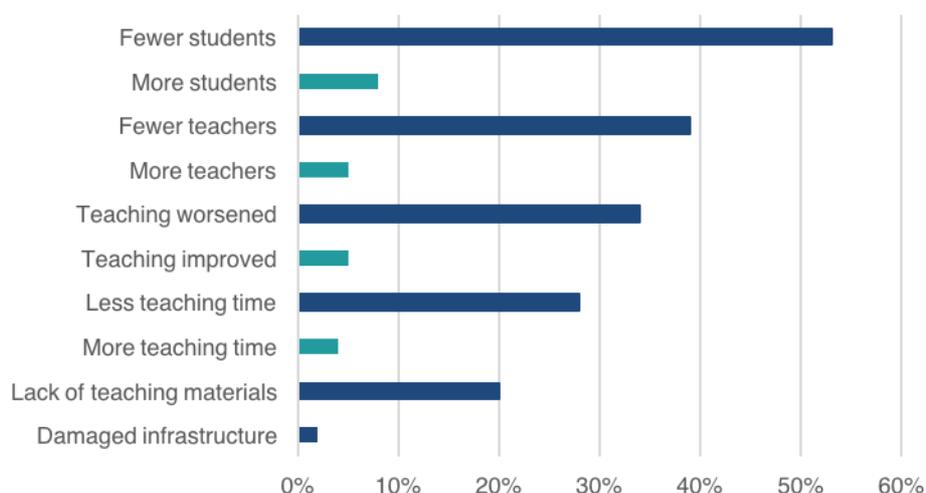
**SCHOOL CLOSURE** Most schools in Juba shut down when the fighting started, but all types of schools were fully operational again within two weeks of the closure. This was confirmed through the household survey and interviews with headmasters and government officials. Headmasters in all four visited schools said that their school was open and at least partially staffed within days, but that it took the parents on average two weeks to start sending children back to school.

**IMPACT ON SCHOOLS** Survey respondents in Juba were asked about changes to the schools that their children attended, if any, as a result of the armed conflict in July 2016. A summary of their responses is provided in Figure 7.1.

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<sup>22</sup> These percentages were calculated taking into account the socioeconomic characteristics of the household. Gender, age, age squared, and education level of the head of household were controlled for; also accounted for were the number of working-age people, whether the household shared a home, and whether it received an income.

**Figure 7.1. Changes in Education After the Conflict, Juba**



Response rates were similar across different school types with a few exceptions: according to respondents, **private schools experienced a more dramatic reduction in the number of students enrolled**—68 percent of households with children in private schools report that there are fewer students compared with 53 percent of households with children in government-run schools. The same is true regarding the number of teachers: 53 percent of households with children in private schools report a reduction; the rate is 39 percent across all other school types. Regarding the quality of teaching becoming, households with children in government-run schools complain more: 39 percent versus 34 percent for all schools.

The proportion of children in Juba who took longer than half an hour to walk to school dropped significantly between July and December 2016. Most children; however, did not change schools during the immediate post-conflict period, indicating either a change in perception or added pressure on children to take the shortest possible route home in a more insecure environment. **In Juba, parents who feel that primary schools are safe to access dropped from 73 to 50 percent** between July and December.

Most children however did not change schools during that period (see chapter 6), indicating either a change in perception or added pressure on children to take the shortest possible route home in a more insecure environment. The proportion of parents in Juba who feel that primary schools are safe to access dropped from 73 to 50 percent from July to December. In addition, Juba households with no earned income are less likely to report feeling safe about accessing education (29 percent) compared with households with an earned monthly income (55 percent). In December 79 percent of parents felt safe sending their children to school in Aweil (figure 3.2).

The four primary schools were revisited and their headmasters interviewed, who identified the following issues as most affecting their schools in the immediate post-conflict environment:

- **Children and staff are traumatized.** This is the first issue highlighted by all headmasters: children are afraid to come to school, convinced that they keep hearing guns and finding it difficult to concentrate. St. Kizito Primary School, a religious school, offers trauma counseling during its morning prayer service, and other schools have started peace clubs to deal with the issue. Three headmasters point out that children are **visibly hungrier**, which interferes with their ability to study.

- **Private schools have lost teachers, while teachers in government-run schools are not paid.** Most of the qualified and English-speaking East African teachers left South Sudan after the conflict and had to be replaced with local teachers. Meanwhile, government teachers had not been paid in three months at the time of research and headmaster of the government-run school reported a difficulty in getting them to teach their classes.
- **Schools were partially looted.** Visited schools report loss of furniture and student property, other schools in Juba lost computers and solar panels according to the county education department.
- **Private and religious schools reduced the number of teaching hours.** Three out of four visited schools send students home earlier in the afternoon in reaction to heightened security concerns in Juba.
- **School management hope not to increase tuition in the coming months.** In spite of the inflation, schools were attempting to prevent further increases in the fee. Most noted that parents, many of whom are government employees and had not been paid for several months at the time of research, already struggled with existing fees and would not be able to accommodate further increases.

## 7.2 CONFLICT AND BASIC HEALTH CARE IN JUBA

**ACCESS** Six months after the July 2016 conflict, its impact on access to health care was mostly through the economic crisis that followed. The number of respondents who no longer felt safe accessing health care increased by 12 percent, both due to lack of trust in medical practitioners and the fear of traveling the distance to the health center increased between July and December 2016.

- For only 25 percent of respondents, access to health care did not change at all between July and December 2016. For those who did see a change, it was most frequently related to the increased cost of drugs and treatment (76 percent of respondents), followed by the availability of drugs (48 percent) and of doctors (39 percent). There were other indications that the economic crisis is restricting access to health care: number of those whose last visit was to a private clinic dropped from 36 percent to 29 percent, 24 percent fewer respondents said that they would seek help if they felt unwell and 26 percent fewer would seek help in case of an accident. Visits to medical facilities also appeared to become less frequent, with fewer visits reported within the last month of the interview in December compared with July (see Figure).
- During the crisis itself, only the four main government hospitals (Juba Teaching Hospital, Al Sabbah Children’s Hospital, the Military and the Police Hospitals) were reported to have stayed open throughout. Both the Usratuna health center (a primary health care center run by a religious organization) and the private clinic reopened within two days of the end of fighting, while the government-run primary health care center in Kator partially reopened after ten days and took several weeks to return to full capacity. Accordingly, immediately after the crisis most respondents relied on hospitals (43 percent) followed by private providers (27 percent) and the primary health care centers (22 percent).

The most frequently present health issue triggered by the July conflict, as reported by the Ministry of Health, the government-run primary health care center and the private clinic visited by the researchers, was the number of women seeking assistance after being raped during the hostilities.

## QUALITY AND COST OF HEALTH CARE

- Government-run facilities supported by the Health Pooled Fund (HPF) and clinics run by nongovernmental organizations with independent funding did not appear to be significantly affected by the July conflict or the subsequent worsening of economic situation. HPF budget is calculated in dollars and therefore not subject to the devaluation of the South Sudanese pound, and many respondents pointed out that shortages of doctors and essential medicine predate the July conflict.
- The private clinics, on the other hand, have been affected by a number of issues: number of the expatriate medical staff including doctors have chosen not to stay in South Sudan, basic drugs and equipment (e.g. malaria drugs and syringes) are difficult to find in the market, prices of drugs and fuel have increased, hard currency has become more expensive and banks have limited withdrawals of the U.S. dollars. All of this adds up to a significant increase in costs, which is beginning to show in the fees charged by private facilities.

### 7.3 ACCESS TO WATER AND ELECTRICITY IMMEDIATELY POST-CONFLICT

As a part of the survey, respondents were asked how they accessed water and electricity in the immediate aftermath of the July 2016 conflict in Juba. The fighting had a serious impact on their ability to get water and, to a lesser degree, electricity, which is not available to most respondents irrespective of the security situation.

Immediately after the fighting stopped, 25 percent of Juba respondents were not able to find water at all and 64 percent struggled. For half of the respondents, problems lasted for several days and for further 30 percent a week. Water trucks were the first to start delivering water again, according to 73 percent of respondents, and according to 50 percent, water was also available from boreholes and wells. The South Sudan Urban Water Corporation (SSUWC) and the county water department only stopped their work for a few days. But the subsequent economic crisis and rapid devaluation of the South Sudanese pound affected especially the SSUWC, which relies on hard currency to purchase fuel and chemicals to treat the water. 41 percent of respondents said that they were getting less water six months after the conflict.

As the concern with security grew in Juba between July and December 2016, the distances travelled to water points for those who fetch their own water shortened. In Juba, the number of households where women fetch water decreased between July and December from 77 percent to 56 percent and proportion of households where both men and women participate went up from 21 percent to 36 percent, possibly as a result of the worsened security situation and concern with women's safety.

As for electricity, of those with access to electricity pre crisis, 24 percent of respondents were not able to use their source of electricity during the fighting, but 63 percent maintained access throughout. In Juba, one quarter of respondents could access electricity in their own home in December, compared with a third in July, as a result of the conflict. Six months after the conflict, 20 percent had reduced their electricity consumption as a result of the economic crisis, 32 percent spend significantly more, but for 69 percent nothing much has changed.

Availability of income and education attainment significantly increased households' probability to have electricity in Juba in July, but this effect dropped in December. Out of the households that do not earn an income in December, only 4 percent had access to electricity in their home, compared with 29 percent of those with a monthly income. Household with no income were particularly affected by the crisis as the share of households without income but with access to electricity dropped from 35 percent to 4 percent.

## 8. INTERNALLY DISPLACED PERSONS AND ACCESS TO SERVICES

Only relatively few internally displaced persons are found in the randomly selected enumeration areas targeted in the survey (see appendix A—Methodology). Internally displaced households form 6 percent of the overall sample and include 38 households interviewed in Aweil (9 percent of the Aweil sample), 30 households interviewed in Juba in July (7 percent), and 9 households interviewed in December (2 percent). Of the overall sample of internally displaced persons, 53 percent live in mixed households; 47 percent live alone. The resulting sample is too small to be considered representative, although some responses obtained from these households are presented below as illustrations of possible living situations among internally displaced persons in the two cities.

### INTERNALLY DISPLACED PERSONS IN JUBA

Most of the interviewed internally displaced households came to Juba from Western and Eastern Equatoria and had been in Juba for an average of 14 months at the time of the interview. No particular ethnic group dominates. Among the 30 households interviewed in July 2016, 18 left their homes after a direct experience of violence, and most households had chosen Juba for the relative security it offers. Those interviewed in July are poorer on average than resident households (18 percent have no income compared with 4 percent of the resident population and their average income is 59 percent lower than the hosts, however the nine households interviewed in December do not appear any poorer than the resident population.

### INTERNALLY DISPLACED PERSONS IN AWEIL

Twenty out of 38 interviewed internally displaced households in Aweil, are from Western Bahr el-Ghazal and had been in Aweil for seven months on average. Most belong to the Dinka ethnic group, as do most Aweil residents. Like Juba, 22 households left their homes because of the worsening security situation, and 16 households chose Aweil because of its safety; others came to pursue economic opportunities and to access services. Interviewed internally displaced households in Aweil are not economically worse off than their resident counterparts: 45 percent do not earn an income compared with 41 percent of the general population, and for those who do, it is an average of 17 percent higher than the income of residents.

### ACCESS TO SERVICES

Although internally displaced households were asked whether they had better or worse access to the different services compared with their former places or residence, there were no discernible trends in their answers. When describing their access to education, those in Aweil were equally likely to say that their access was now the same, better, or worse, while respondents in Juba tended toward “better.” Regarding health and water, the responses in Aweil and Juba were equally distributed.

Perceptions regarding whether or not internally displaced households have the same access to services as resident households are similarly inconclusive. Fifty percent of Aweil’s internally displaced households say that their access to services is the same, while the other half disagrees. In Juba in July, two-thirds of internally displaced respondents thought that their access to services was worse, but in December eight out of nine thought it was the same. Among those who feel that their access to services is worse, water, health, and education are all identified as being affected, in large part due to a lack of financial resources.

## 9. CONCLUSIONS

The most recent relapse into armed conflict since the events of July 2016 has resulted in a complete shift toward humanitarian life-saving support in South Sudan. Currently, infrastructure and services are mostly supported by donors, with approximately US\$80 million in humanitarian support being provided in health, education, and water from 2014 to 2017 (United Nations 2017), comprising US\$50.1 million for health, US\$25.4 million for water and sanitation, and US\$4 million for education. The recent conflict has had a significant impact on the overall supply of services, with a substantial part of the government budget currently being spent on salaries and security costs. The government's financial support to service delivery in South Sudan, especially in recent years, is limited—emergency humanitarian support fills most of the gap. Government budget allocations to these sectors have decreased from US\$143.9 million in fiscal 2014/15 to only US\$6.6 million in fiscal 2017/18. Similarly, education expenditures have gone down from US\$237.3 million in fiscal 2014/15 to US\$7.9 million in fiscal 2017/18, and water expenditures have gone from US\$25.5 million in fiscal 2014/15 to only 700,000 in fiscal 2017/18. (Ministry of Finance and Economic Planning)

Under these current circumstances, little space can be found for policy discourse around long-term development solutions for the provisioning of basic services. Nevertheless, this study has attempted to describe the impact of the conflict on service provision and to illuminate potential pathways toward more sustainable service delivery as the political and security conditions allow. Clearly, if government financing for basic services is to have any real impact on service delivery, it must be substantially increased. The focus of this study, however, is on the end use of these services and the models of their delivery, regardless of the financing sources.

The findings and dynamics identified during the study can apply to more than one sector or cut across all four of the service sectors analyzed in this report. This section outlines crosscutting conclusions derived from the study findings to provide an overview of the state of service delivery and alternative delivery models in South Sudan.

**The presence of alternative service delivery models are currently limited in the four service sectors analyzed but are key to improving the quality and coverage of service delivery in South Sudan.** In education and health sectors, nationwide support programs like Girls Education South Sudan (GESS), Health Pooled Fund (HPF), and the Health Rapid Results Program are building government capacity and injecting funding into the system, while private providers deliver services at the grassroots level with or without government support. The private sector helps fill the gap in urban water and electricity delivery, through privately owned water treatment plants and water trucks, small-scale generators, and household solar panel installation, as examples.

**The government could potentially play a much stronger role in alternative service delivery through regulation, quality assurance and monitoring.** In primary education, the government has already set up the capitation grant distribution mechanism to facilitate government oversight of private service providers. In terms of health, water, and electricity distribution, private providers operate largely absent government supervision.

**Basic health and primary education services have achieved high levels of coverage in urban areas.** In Juba, primary school enrollment rates are relatively high (84 percent), and there are a variety of government and alternative providers present. In Aweil, enrollment rates are lower (63 percent), and choice of providers is more restricted; nevertheless, the density of the health and education provider networks is considered sufficient by those interviewed. The affordability and quality of health and education services, including the state of the existing infrastructure, are the main concern of most respondents and interviewed stakeholders.

**Urban water and electricity services receive less support than health and education, resulting in a lack of access.** In Juba, half the respondents struggle to find enough water to cover their needs, while in Aweil, the majority of households consume untreated water that is unsafe to drink. Meanwhile, government has ceased to provide access to electricity, leaving the relatively few households with sufficient incomes to make their arrangements on their own. Despite these challenges, however, no large-scale national-level programs or interventions to support the government in delivering these services currently exist. The lack of water and electricity in urban areas also affects primary education and health care: schools have no access to water and hospitals suffer from power shortages, as examples.

**Quality of service is a challenge felt across all studied sectors (except for electricity, where the service itself is absent), especially in the lower cost segments of the market.** Education and health providers suffer from a lack of qualified personnel and quality materials, while the water sector is marked by a lack of potable water. A relationship exists between income and access to services that are perceived to be of better quality across three sectors (electricity being excluded) in both cities. Higher-income households (or those with income compared with those with none) tend to opt for more expensive but higher quality service. An exception relates to access to potable water in Aweil, where none is available, and surgery, which tends to be available only at government hospitals.

**Alternative health and education providers play an important role in maintaining the presence of higher-quality services in urban areas.** Private schools and private clinics are recognized as delivering higher quality service at a higher cost, and therefore only being available to those who can afford it. In addition, HPF clinics with significant participation by nongovernmental organizations in their management are described in the same terms; heavily subsidized by the HPF, they are also affordable. The quality of the service delivered by private providers is better in Juba, where the government closely supervises and scrutinizes them, than in Aweil, where government oversight is weak.

**The presence of qualified teachers and doctors is the most commonly identified signifier of quality service in the health and education sectors.** Private schools tend to employ more experienced, English-speaking teachers; and private health clinics are often run by expatriate doctors who supplement their staff with South Sudanese doctors. The shortage of doctors is particularly pronounced in South Sudan, which relies on the two national-level health care programs (HPF and Health Rapid Results Program) to fund a substantial expatriate medical workforce.

**Private education and health care providers are able to maintain higher quality standards due to the flexibility resulting from having access to cash payments.** Through levying tuition and patient fees, private providers maintain control over their budget, staff hiring, and material procurement. In the volatile environment of South Sudan, this enables them to adjust procurement practices or replace absent staff. By contrast, government providers operate on an almost cashless basis, relying on government or a nongovernmental organization's payroll and centralized supply chains. An exception is the capitation grant for primary schools, whereby government-run schools are given control over a portion of their budget.

**There are significant differences in terms of capacity and involvement between county/state-level government in Juba versus Aweil.** In Juba, the county's education and health departments are both heavily involved in administering Girls Education South Sudan (GESS) and the HPF, as confirmed in interviews with the government and service providers. The county water department is also engaged despite the lack of funding. In Aweil, the county-level departments are either nonexistent or inactive. Some of the duties related to health and water have been taken on by the relevant municipal council departments, but a overall lack of government involvement has led to reduced oversight over education and water delivery and virtually no oversight over private health care providers.

**Private health care providers have little accountability to the government or to the community.** They are not subject to regular inspections by the county health department and are not under the supervision of community-level committees or other complaint models. According to interviewed doctors, patients either complain directly to the facility or go directly to the police. The population would greatly benefit from additional scrutiny and regulation by government of private health care providers and pharmacies as well as drug importers.

**The conflict did not have an immediate significant impact on service delivery in Juba, but violence and the ensuing economic crisis did affect households and service providers.** According to respondents, primary education and access to water were interrupted during the crisis but reverted to their normal state within two weeks, and several hospitals stayed open throughout the crisis. The ensuing inflation, shortages of fuel and hard currency, and inability of the government to pay salaries reduced the affordability of services, led to a decreasing number of government-employed teachers and doctors present at facilities, and reduced the faith of respondents in the effectiveness of lodging a complaint regarding service delivery. Insecurity reduces the likelihood of people seeking help if they fall ill and decreases travel time to service providers as people were more likely to go to the closest water point and children were taking the shortest route home due to insecurity.

## 10. RECOMMENDATIONS

This chapter proposes alternative service delivery interventions for each of the four sectors addressed in this study. The relevant international interventions for the sectors are briefly described and detailed full-length case studies are provided in *International Case Studies* part two of this three-part series. All proposed interventions would improve service delivery only if they were to be combined with substantial policy and governance reform in the respective sectors, increased financial contribution to these sectors by the government, strengthened government capacity at all levels, and improved private sector participation. Some suggested interventions may be particularly relevant to urban areas, such as private sector engagement in education and health, but could also be relevant to rural service delivery.

The role of government is identified for each proposed intervention and sector. The last recommendation listed for each of the sectors proposes cross-cutting ways of strengthening the government's role in existing and future alternative service delivery models.

### 10.1 PRIMARY EDUCATION

The primary education sector benefits from a network of existing primary schools and enrollment rates appear to remain relatively constant regardless of other factors such as insecurity but quality of the delivered service is low and under threat from the continuing fiscal and economic crisis.

Table 10.1 presents four proposed alternative service delivery interventions, inspired by the findings presented in this report as well as the case studies report. One of the proposed interventions is directly inspired by alternative education approaches in Kenya and Bangladesh. The case studies are briefly described in Box 10.1.

#### Box 10.1. International Case Studies: Primary Education

##### **Trainer-in -the-hand Approach, English in Action, Bangladesh**

Implemented in Bangladesh since 2008, the trainer-in-the-hand program seeks to improve the quality of English-language instruction in primary and secondary schools. Like South Sudan, English is a second language for most local teachers. The program provides teachers at government-run schools with training, complemented with an inexpensive phone loaded with teaching materials and context-appropriate interactive classes. The program scales up by promoting advanced teachers within the network to *facilitator teachers* who are encouraged to assist their peers who are participating in the program. Mott MacDonald, a company that also leads the consortium that implements Girls Education South Sudan, implements this approach.

##### **Eneza Education Mobile Phone Platform, Kenya**

Eneza Education is a Kenyan social enterprise founded by teachers. It uses Short Message Service (SMS) technology to improve student learning. For a small nominal fee, students can use their mobile phone as a study tool to take quizzes related to the national curriculum. Based on their answers, students receive feedback, tips, and mini-lessons. The education content is aligned to Kenya's national curriculum and covers math, science, Kiswahili, and English. Teachers can track student performance because data collected by the mobile phones feeds back into a central location that is accessible to teachers and parents. The system uses the Unstructured Supplementary Service Data protocol and SMS and can therefore be accessed through any mobile phone.

For more details on both programs see the international case study report, part two of this three-part series.

**Table 10.1. Recommended Interventions for Primary Education**

RECOMMENDATION	PROPOSED WAY FORWARD	KEY STAKEHOLDERS
<p><b>1. ACCESS TO PRIMARY EDUCATION</b>  <b>Financial support to vulnerable students.</b> Currently, orphans and students from vulnerable households are financially supported directly by schools on a case-by-case basis, but household income is the one factor found to influence primary school enrollment.</p> <ul style="list-style-type: none"> <li>• Bolster primary school enrollment in a cost-effective manner by subsidizing the associated costs of studying at government-run schools—like some schools are currently doing.</li> <li>• Take advantage of existing models of funding and accountability, such as parent-teacher associations and school management committees.</li> <li>• Free up cash-strapped schools to use a capitation grant to invest in infrastructure, school supplies, and other necessities, as originally intended. This is critical since 60 percent of the capitation grant is now being used to subsidize teacher salaries in government-run schools.</li> </ul>	<ol style="list-style-type: none"> <li>1. Draw up a sample of schools to include in the pilot program.</li> <li>2. With the cooperation of school headmasters, conduct a needs assessment of vulnerable students at targeted schools.</li> <li>3. Establish a support/scholarship fund.</li> <li>4. Implement a monitoring and evaluation mechanism to track the spending and establish the fund’s impact.</li> <li>5. Engage with the Ministry of Education, Science, and Technology to embed the fund into its existing structures.</li> <li>6. Conduct an assessment for the potential scale-up of the fund.</li> </ol>	<p><b>GOVERNMENT</b>  Ministry of Education, Science, and Technology  Government-run schools</p> <p><b>ALTERNATIVE</b>  Implementer  Low-cost private, religious and community-run schools</p> <p><b>CONSUMERS</b>  Vulnerable households in urban areas</p>
<p><b>2. ACCESS TO PRIMARY EDUCATION</b>  <b>Scholarships for gifted students to local schools.</b> Juba and Respondents judge some Aweil schools as being of better quality than comparable schools in Uganda, but they are not affordable for majority of urban households.</p> <ul style="list-style-type: none"> <li>• Scholarships that cover the cost of tuition in Juba and Aweil schools represent a cost-effective intervention.</li> <li>• Scholarship programs support gifted students and well-performing schools. An increased number of students will enable schools to draw on larger capitation grants and, according to key informants, schools that provide high-quality education also tend to be more efficient and strategic with their capitation grant spending.</li> </ul>	<ol style="list-style-type: none"> <li>1. Draw up a sample of schools to include in the pilot program.</li> <li>2. In cooperation with school headmasters, conduct a needs assessment of gifted students at targeted schools.</li> <li>3. Establish a support/scholarship fund.</li> <li>4. Implement a monitoring and evaluation mechanism to track the spending and establish the fund’s impact.</li> <li>5. Engage with the Ministry of Education, Science, and Technology to embed the fund within its existing structures.</li> <li>6. Conduct an assessment for the potential scale-up of the fund.</li> </ol>	<p><b>GOVERNMENT</b>  Ministry of Education, Science, and Technology  Government-run schools</p> <p><b>ALTERNATIVE</b>  Implementer  Low-cost private, religious and community-run schools</p> <p><b>CONSUMERS</b>  Gifted students in urban areas</p>

RECOMMENDATION	PROPOSED WAY FORWARD	KEY STAKEHOLDERS
<p><b>3. QUALITY OF PRIMARY EDUCATION</b></p> <p><b>Access to teaching and learning materials.</b> Insufficient teacher training and a lack of supporting materials and textbooks for both students and teachers are among the dominant factors behind the poor quality of primary education. The two case studies in box 10.1 present possible solutions.</p> <ul style="list-style-type: none"> <li>English language is not the first language of majority of teachers; and they receive an average only three weeks of in-service training. Since there is already a shortage of qualified teachers and trainers in the country, traditional in-person teacher training cannot happen on a sufficient scale to address the problem.</li> <li>Using expensive information and communication technology poses a security risk. Both approaches rely on <b>inexpensive phones</b>—they do not require the use of smartphones or tablets to access learning and teaching materials.</li> </ul>	<p><b>TEACHER TRAINING (“trainer-in-the hand” approach)</b></p> <ol style="list-style-type: none"> <li>Engage an implementer to work with the Ministry of Education, Science, and Technology to adapt teacher training materials (developed for consumption on a mobile platform) to South Sudanese context.</li> <li>Select pilot schools.</li> <li>Procure mobile phones suitable for audio and video content (but not necessarily smartphone).</li> <li>Launch the pilot round in selected schools.</li> </ol> <p><b>MOBILE EDUCATION PLATFORM (Eneza)</b></p> <ol style="list-style-type: none"> <li>Engage the implementer to work with the Ministry of Education, Science, and Technology to adapt the educational content to the government curriculum.</li> <li>Launch the platform in South Sudan.</li> <li>Conduct an awareness-raising campaign targeting primary schools in urban and/or rural areas.</li> <li>As a possible support activity, distribute low-cost phones with credit to selected schools to encourage the use of the platform.</li> </ol>	<p><b>GOVERNMENT</b> Ministry of Education, Science, and Technology Government-run schools</p> <p><b>ALTERNATIVE</b> Implementer Low-cost private, religious and community-run schools</p> <p><b>CONSUMERS</b> Teachers and students</p>

RECOMMENDATION	PROPOSED WAY FORWARD	KEY STAKEHOLDERS
<p><b>4. COST AND ACCOUNTABILITY</b></p> <p><b>Expand funding to primary schools using the capitation grant mechanism.</b> The mechanism involves the government and is supported by necessary accountability mechanisms.</p> <ul style="list-style-type: none"> <li>• Most schools in the two cities are overcrowded and lack basic amenities, including access to water, walls and fences, textbooks, and secure storage. These issues can only be addressed through additional funding that is unlikely to come from the government over the near to medium term.</li> <li>• To strengthen the accountability mechanisms in the funding process, PTAs would need to be revived at most schools, and although they play an influential role in school management, most parents do not interact with or through the committee.</li> </ul>	<ol style="list-style-type: none"> <li>1. Coordinate with the Ministry of Education, Science, and Technology and GESS to establish the mechanism for the expansion of the capitation grant.</li> <li>2. Ensure that PTAs and school management committees are active at the select pilot schools.</li> <li>3. Disburse funds.</li> <li>4. Monitor the spending and impact of the disbursed funds on selected schools through the existing accountability mechanisms and third-party monitoring.</li> <li>5. Consider scaling-up the intervention.</li> </ol>	<p><b>GOVERNMENT</b> Ministry of Education, Science, and Technology)</p> <p>Government-run schools</p> <p><b>ALTERNATIVE</b> Implementer</p> <p>Girls Education South Sudan (GESS)</p> <p>Low-cost private, religious and community-run schools</p> <p><b>CONSUMERS</b> Staff and students at urban schools</p>

RECOMMENDATION	PROPOSED WAY FORWARD	KEY STAKEHOLDERS
<p><b>5. STRENGTHENING GOVERNMENT CAPACITY TO SUPPORT ALTERNATIVE PRIMARY EDUCATION DELIVERY MODELS</b></p> <p>The county education department and the payam supervisors are identified as playing the key roles in primary education, and both are integrated into the capitation grant delivery mechanism supported by GESS and its implementing partners. In addition, it is the role of the Quality Promotion Directorate at the Ministry of Education, Science, and Technology to monitor quality of service delivery. To strengthen the role of government departments in supporting alternative service delivery models, the World Bank/donors should:</p> <ol style="list-style-type: none"> <li><b>1. Strengthen county education department oversight of primary education outside of Juba.</b> As discussed in chapter 3—Primary Education—a lack of government oversight and regulation can translate into poor quality delivery of education through alternative service delivery models. In Aweil, the lack of county education department oversight has led to a drop in quality of service delivered in alternative schools and a subsequent loss of trust in alternative providers. In Juba, where oversight is stronger, parents show less reliance on government-run schools, leading to a more diverse and resilient network of providers.</li> <li><b>2. Build capacity of Quality Promotion Directorate at the Ministry of Education, Science, and Technology.</b> The quality of primary education is not currently being tracked, recorded, or reported. The directorate lacks both the capacity and funding to regularly inspect the state’s schools, design quality indicators, or set up appropriate data collection and reporting systems.</li> <li><b>3. Repair the accountability relationship between consumers and the government.</b> The survey results show that almost no one in either Juba or Aweil will go to the county education department or the payam supervisors to raise issues relating to primary schools. In a context where the mobility of government staff is constrained due to the limited funds, and their visits to schools infrequent, this deprives local government of an additional source of feedback on school performance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Work with the national-level Ministry of Education, Science, and Technology to address staffing and capacity issues at the Aweil county education department.</li> <li>2. Work with GESS and GESS State Anchor in Aweil to analyze and address obstacles to county education department involvement in GESS implementation.</li> <li>3. Design and implement a quality monitoring system for primary education in cooperation with the Quality Assurance Directorate of the Ministry of Education, Science, and Technology.</li> <li>4. Explore programming models for bolstering community interaction with urban government institutions, such as the county education departments covering urban areas and urban councils. This could take form of town hall meetings with a focus on education, accompanied by training for government officials in how to process complaints, manage meetings, and interact with service consumers.</li> </ol>	<p><b>GOVERNMENT:</b> Ministry of Education, Science, and Technology</p> <p>Quality Promotion Directorate at the Ministry of Education, Science, and Technology</p> <p>County Education Department</p> <p>City Council</p>

GESS = Girls Education South Sudan; PTA = parent-teacher association.

## 10.2 BASIC HEALTH CARE

The strengths of the basic health care delivery system are in a large part related to the coupling of government-run facilities with an alternative support system, while the weaknesses relate to quality of service delivery and a lack of regulation of the facilities outside of that system. The presence of foreign funding and staff generates opportunities, but threatens reliance on external support and a diverging level of delivery between the government-run and the alternative system.

Table 10.2 lists two proposed alternative service delivery interventions, inspired by the findings presented in this report and in the *International Case Studies* report. One of the proposed interventions is directly inspired by alternative health care delivery scheme in Kenya. The case study is briefly described in box 10.2.

### Box 10.2. International Case Studies: Basic Health Care

#### **Child and Family Wellness Clinics, HealthStore Foundation, Kenya**

The Child and Family Wellness franchising model, implemented in Kenya since 1997, offers existing private clinics and pharmacies an opportunity to become part of a network. In exchange for the use of the 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 franchisee clinics and pharmacies with business incentives to comply with the regulations and thus provide high-quality and affordable health services. The Kenyan network includes 17 pharmacies and 48 clinics, treating an average of 40,000 customers and patients every month.

*For more details on the program see the International Case Study report.*

**Table 10.2. Recommended Interventions for Basic Health Care**

RECOMMENDATION	PROPOSED WAY FORWARD	KEY STAKEHOLDERS
<p><b>1. ACCESS, QUALITY AND ACCOUNTABILITY:</b>  <b>Introduce an alternative regulatory model for private clinics and pharmacies.</b> As the survey results showed, significant portion of urban patients rely on private clinics, which are subject to little or no regulation. The case study in Box 10.2 shows a possible solution although this would need to be combined with wider policy reform.</p> <ul style="list-style-type: none"> <li>• A franchising scheme for small private clinics and pharmacies is especially relevant in mid-size and small towns where the capacity of the county health department is weaker.</li> <li>• The recognizable network branding can help mobile and internally displaced households to find and recognize reputable private health care providers when they freshly arrive into new towns.</li> <li>• Access to quality health commodities is particularly difficult for private providers, who charge their patients in South Sudanese pounds but need access to hard currency to order drugs from abroad. Access to a cost-effective and efficient supply chain would therefore likely act as a strong incentive to comply with the network’s regulatory standards.</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct a survey of private health care providers to investigate in more detail what kind of incentives would motivate them to enroll in the scheme.</li> <li>• Work with the Ministry of Health to draw up the regulatory framework that the participants in the scheme should subscribe to.</li> <li>• Identify and contract Implementing Partners to: design the branding for the network (if not replicating an already existing scheme), implement an awareness campaign among providers and consumers to run the franchising scheme.</li> </ul>	<p><b>GOVERNMENT:</b></p> <p>Ministry of Health</p> <p>City and Municipal Councils (only if focused on urban areas)</p> <p><b>ALTERNATIVE:</b></p> <p>Implementers</p> <p>Private clinics in urban areas</p> <p><b>CONSUMERS:</b></p> <p>Households in urban areas</p>

RECOMMENDATION	PROPOSED WAY FORWARD	KEY STAKEHOLDERS
<p><b>2. COST:</b>  <b>Investigate patient spending at HPF facilities in Juba and Aweil and design an adequate response mechanism.</b> Although HPF facilities run jointly by the government and supporting nongovernmental organizations, and purely government-run facilities, are supposed to provide access to treatment and medicines that is almost free, patients were found to be spending on average US\$11 per hospital visit in Juba and US\$9 in Aweil.</p> <ul style="list-style-type: none"> <li>• Need behind this spending was not identified during this study but could include the cost of drugs and equipment which are both missing at the facility, cost of food in case of hospitalization, or even cost of fuel necessary to power a generator through a surgery.</li> <li>• Reduction of the average amount spent per visit would significantly improve accessibility of health facilities in urban areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct an additional study building on the findings presented in this report and focused on patient spending at HPF health care facilities in urban areas.</li> <li>• Based on the outcome of the study, work with the Ministry of Health and the HPF implementers to identify excessive patient spending and work to reduce it where possible by improving the health commodity supply chain, investing in in-patient facilities etc.</li> </ul>	<p><b>GOVERNMENT:</b></p> <p>Ministry of Health  Government health facilities</p> <p><b>ALTERNATIVE:</b></p> <p>Health Pooled Fund  County implementing partners of Health Pooled Fund  Study implementer</p> <p><b>CONSUMERS:</b></p> <p>Patients at government or HPF health facilities</p>
<p><b>3. STRENGTHENING THE CAPACITY OF THE GOVERNMENT TO SUPPORT ALTERNATIVE HEALTH CARE DELIVERY MODELS</b></p> <p>County health departments are already receiving substantial support through the HPF and Health Rapid Results Program, which fund international nonprofit organizations to develop the capacity of the county health department and assist in the delivery of basic health services.</p> <p>To further develop government capacity in engaging with alternative service delivery, it is recommended to concentrate on bridging the gap in the oversight and regulation of private health care providers, who currently operate outside of the HPF and Health Rapid Results Program framework.</p>	<ul style="list-style-type: none"> <li>• Work with the Ministry of Health to develop a regulatory framework for private health care providers, which can form the basis of a franchise network as described above or be implemented on its own.</li> <li>• Improve the capacity of urban councils to inspect and monitor quality of drugs and medical equipment sold in privately operated pharmacies on the market.</li> </ul>	<p><b>GOVERNMENT:</b></p> <p>Ministry of Health  County Health Department  Juba City Council  Aweil Municipal Council</p>

HPF = Health Pooled Fund.

## 10.3 WATER UTILITIES

Urban water utilities have few strengths beyond the existing infrastructure and presence of a vibrant water trucking industry in Juba, whereas weaknesses are numerous and centered around concerns with water quality. Table 10.3 lists the proposed alternative service delivery interventions, inspired by the findings presented in this report and in the *International Case Studies* report, which is part two of this series. The proposed interventions are directly inspired by alternative water delivery in Senegal and Niger. The case studies are briefly described in box 10.3.

### Box 10.3. International Case Studies: Water

#### **Manobi mWater Platform, Senegal**

mWater is a web platform that uses mobile phone applications and web services to centralize and analyze data linked to the water network. The platform, developed by the Senegalese company Manobi, was piloted in Senegal in 2008. mWater includes two interfaces: a mobile phone application used to manually enter data linked to the water network, and a web platform, where the data is centralized and processed. It is used by the water network managers to map all the water network components, follow-up on the water network production volumes, and monitor the commercialization of the network through, for example, meter readings and billing process.

#### **CityTaps Smart Water Meters, Niger**

CityTaps installs Pay As You Go (PAYG) smart meters on water pipes. The model allows customers to make prepayments to the water utility using Short Message Service (SMS) and a simple mobile phone, and in exchange they can pay for and access piped water. 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 offers flexibility, because households choose when and how much they want to pay. Poor households with irregular incomes can control their expenses ex-ante and only pay for the water they consume, rather than paying a flat fee. For service providers, the system eliminates the cost of billing and customer default. Water utilities access new revenue streams through this approach. Their risk-return profile is improved, making investments in pipe infrastructure more attractive.

*For more details on all programs see the International Case Study report.*

**Table 10.3. Recommended Interventions for Water**

RECOMMENDATION	PROPOSEDWAY FORWARD	KEY STAKEHOLDERS
<p><b>1. ACCESS AND COST OF WATER</b></p> <p><b>Install consumption monitoring and billing system to the distribution networks in Juba.</b> This intervention is inspired by water meter systems installed by alternative service providers in Senegal and Niger and described in box 10.3).</p> <ul style="list-style-type: none"> <li>Both the SSUWC, which manages the water treatment plant, and the county water department, which manages the boreholes, struggle to monitor water consumption, status of water distribution points in their networks, and monetization of water consumption.</li> <li>The installation of smart water meters on a water network monitoring system could be accomplished in partnership with the relevant government departments and an alternative service provider with the relevant technical expertise.</li> </ul>	<p><b>NETWORK MONITORING SYSTEM</b></p> <ul style="list-style-type: none"> <li>Engage the county water department in Juba.</li> <li>Select and engage the monitoring platform (database with website and mobile interface) provider as the alternative service provider.</li> <li>County water department to conduct mapping of water sources (wells and boreholes) under its management.</li> <li>Alternative service provider to integrate data collected by the county water department into the platform.</li> <li>Procure IT equipment for the county water department.</li> <li>Alternative service provider to train the county water department on the use of the platform.</li> <li>Explore sources of funding (government and alternative) for the repair and maintenance of water sources monitored through the platform (possibly by introducing billing system, as described below).</li> </ul> <p><b>CONSUMPTION MONITORING AND BILLING SYSTEM</b></p> <ul style="list-style-type: none"> <li>The Ministry of Electricity, Dams, Irrigation, and Water Resources will decide whether wells and boreholes managed by SSUWC and the county water department should both be included—water is currently provided for free by the county).</li> <li>Engage an alternative service provider who will deliver and install smart meters (see box 10.3).</li> <li>Alternative service provider together with SSUWC to install smart meters to the SSUWC piped network (if only SSUWC included).</li> <li>Alternative service provider together with SSUWC to implement a communication campaign to educate concerned households about the new prepay system that uses mobile phone credits.</li> </ul>	<p><b>GOVERNMENT</b></p> <p>Ministry of Electricity, Dams, Irrigation, and Water Resources</p> <p>Juba County Water Department</p> <p>SSUWC of Juba</p> <p><b>ALTERNATIVE</b></p> <p>Private sector monitoring and/or billing platform providers</p> <p><b>CONSUMERS</b></p> <p>Households connected to the SSUWC piped network</p> <p>Households drawing water from wells and boreholes managed by the county water department</p>

RECOMMENDATION	PROPOSED WAY FORWARD	KEY STAKEHOLDERS
<p><b>2. ACCESS TO AND QUALITY OF WATER</b></p> <p><b>Create a municipal water utility in Aweil.</b> As described in 10.3, the German development agency GIZ funded the establishment of municipal water utilities in three small to mid-size towns in Greater Equatoria.</p> <ul style="list-style-type: none"> <li>• Aweil is suffering from a severe lack of treated water that is safe to consume. There are currently no large-scale water treatment plants supplying the city.</li> <li>• The municipal council is active in Aweil: the public health and water departments under the council were both interviewed for this report. Although the water department might require substantial capacity building to be able to manage a utility, the office itself is staffed and relatively active.</li> <li>• Although no river passes through Aweil, a high water table should ensure access to enough water to be processed.</li> </ul>	<ul style="list-style-type: none"> <li>• Liaise with GIZ to obtain additional materials and manuals on the set up of municipal utilities in South Sudan.</li> <li>• Liaise with Aweil’s municipal council.</li> <li>• Create the utility and set up a utility governance body that includes representatives from the municipal council and the utility’s management.</li> <li>• Conduct a needs assessment to estimate the consumer base and volume of water to be produced.</li> <li>• Conduct a feasibility study on the water treatment and distribution infrastructure.</li> <li>• Conduct a price optimization study to fix a price that will be affordable to the local population but at the same time cover the utility’s operating costs.</li> <li>• Mobilize external investment in the utility infrastructure.</li> </ul>	<p><b>GOVERNMENT</b></p> <p>Aweil Municipal Council</p> <p><b>ALTERNATIVE</b></p> <p>Implementer (the World Bank or other)</p> <p>Investor (Infrastructure)</p> <p><b>CONSUMERS</b></p> <p>Households in Aweil</p>
<p><b>3. STRENGTHENING THE CAPACITY OF THE GOVERNMENT TO SUPPORT ALTERNATIVE WATER-DELIVERY MODELS</b></p> <p>The two interventions listed above focus on using alternative service delivery models to strengthen the effectiveness of government-led water delivery.</p> <p>The recommendations listed on the right focus on ways of strengthening the capacity of government stakeholders toward alternative service providers, particularly in terms of oversight and regulation.</p>	<ul style="list-style-type: none"> <li>• Work with the county water department and city council in Juba to extend the testing of water quality to the (private) water truck distribution network, for example, by introducing compulsory color coding for trucks carrying potable water versus untreated river water.</li> <li>• Support the county water department with testing equipment and capacity to enable testing of all water sources (private and public) in Juba.</li> <li>• Ensure that the Aweil municipal council’s water department has available equipment and capacity to test and treat existing water sources in Aweil.</li> <li>• Conduct public communication campaigns with the Juba’s city council and Aweil’s municipal council promoting household water treatment.</li> <li>• Work with the Juba’s city council and Aweil’s municipal council to develop and implement a system of fees and fines levied against private water suppliers whose water does not meet a sufficient standard of quality.</li> </ul>	<p><b>GOVERNMENT</b></p> <p>Ministry of Electricity, Dams, Irrigation, and Water Resources</p> <p>Juba County Water Department</p> <p>Juba City Council Water Department</p> <p>Aweil Municipal Council Water Department</p> <p>SSUWC of Juba</p>

SSUWC = South Sudan Urban Water Corporation.

## 10.4 ELECTRIC UTILITIES

The main weakness of the electricity service sector is the complete absence of electricity as a public or alternative service. In the absence of adequate government-run service delivery models, opportunities for intervention are wide open, but threats of rising costs for all aspects of service delivery persist.

Table 10.4 lists the proposed alternative service delivery interventions, inspired by the findings presented in this report and in the *International Case Studies* report, part two of this series. The proposed intervention is directly inspired by alternative electricity delivery in Nigeria. Box 10.1 provides a brief overview of the case study.

### Box 10.4. International Case Studies: Electricity

#### Lumos Solar Home Systems, Nigeria

Lumos Solar Home Systems (SHS) consists of a mounted solar energy kit that is designed to cover the basic electricity needs of a single household. The system is distributed on the rent-to-own basis, with households required to contribute a small down payment to receive the kit and to use airtime on their mobile phones to prepay for the solar energy it provides. Once a household has covered the full cost of the SHS kit through weekly installments, it becomes the full owner of the system and is no longer required to prepay for electricity.

For more details on all programs, see the *International Case Study* report that is part of this series.

**Table 10.4. Recommended Interventions for Electricity**

RECOMMENDATION	PROPOSED WAY FORWARD	KEY STAKEHOLDERS
<p><b>1. ACCESS TO ELECTRICITY</b></p> <p><b>Expand household-level access to electricity through rent-to-own solar kits.</b> Electricity is currently accessed only at the individual household level. The case study presented in box 10.1 offers a potential way of expanding access.</p> <ul style="list-style-type: none"> <li>• The rent-to-own model brings solar power to households that would otherwise not be able to afford the start-up cost of purchasing and installing the system.</li> <li>• Rising costs and difficulty in procuring fuel for even a small generator makes solar power a significantly more cost-effective source of electricity.</li> <li>• The payment system using airtime transfer is replicable in most urban centers in South Sudan, where mobile phones can be charged with credit in the market.</li> </ul>	<ul style="list-style-type: none"> <li>• Engage an alternative service provider capable of supplying household solar kits.</li> <li>• Conduct a feasibility study in urban areas estimating the potential customer base and ability to repay the cost of the kit.</li> <li>• Conduct a pilot program in Juba with a small sample of households; estimate the functionality of kits in the South Sudanese context and of the mobile-based payment system.</li> <li>• Make the system available to households in other urban location across South Sudan.</li> </ul>	<p><b>GOVERNMENT</b> n/a</p> <p><b>ALTERNATIVE</b> Solar kit provider</p> <p><b>CONSUMERS</b> Households in Juba and elsewhere in urban South Sudan</p>
<p><b>2. STRENGTHENING THE CAPACITY OF THE GOVERNMENT TO SUPPORT ALTERNATIVE ELECTRICITY DELIVERY MODELS</b></p> <p>While household-level electricity solutions, as presented above, can bridge part of the service delivery gap, the restarting of SSEC operations in urban areas is instrumental to renewing access to electricity.</p> <p>The SSEC can take a lesson from the National Rural Electrical Association electric cooperatives and focus on a limited start-up phase, targeting customers who can afford the rates to ensure cost recovery before expanding coverage to previously held levels.</p>	<ul style="list-style-type: none"> <li>• Work with the Ministry of Electricity, Dams, Irrigation, and Water Resources and SSEC to conduct an audit of the available infrastructure and distribution network.</li> <li>• Conduct a study on the affordability of electricity supplied through SSEC and options for cost recovery.</li> <li>• Assist SSEC in establishing a secure fuel supply.</li> <li>• Provide start-up funds to enable SSEC to restart service delivery.</li> </ul>	<p><b>GOVERNMENT</b> Ministry of Electricity, Dams, Irrigation, and Water Resources South Sudan Electricity Corporation</p>

SSEC = Sudan Electricity Corporation SSEC

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## APPENDIX A. METHODOLOGY

Appendix A outlines the methodological approach guiding data collection and analysis presented in this report. This is the third report submitted under the “Opportunities for Improving Urban Service Delivery in South Sudan: Tale of Two Cities” study, following the *Service Delivery Status Report* submitted in May 2016 and the *International Case Studies* report submitted in October 2016. The current report draws on the previously submitted reports and on additional analysis of qualitative and quantitative data collected in South Sudan in July and December 2016.

The methodological approach for qualitative and quantitative data collection was detailed in a *Methodology* note that was submitted to the World Bank in June 2016. All departures from the originally proposed methodology due to changed circumstances in South Sudan are highlighted in the following sections.

### PREVIOUSLY SUBMITTED REPORTS

#### SERVICE DELIVERY STATUS REPORT

The *Service Delivery Status Report* was completed during the inception phase of the project and drew on a four-week desk review and a series of key informant interviews conducted in Juba in March and April 2016. It presented an overview of the service delivery sectors in South Sudan at the time of this writing: social services—health and education; water and electric utilities; core urban services, including liquid and solid waste disposal, lighting, and public transportation; and security and justice. All of the sectors except for security and justice were evaluated on six criteria, and four—education, health, water, and electric utilities—were recommended for further study.<sup>23</sup> Three urban centers are identified as recommended for more detailed research, including fieldwork: Juba, the capital; Wau, in former Western Bahr el-Ghazal; and Yei, in former Central Equatoria. The selection of these three locations was also preserved in the methodology document produced in June. However, both Wau and Yei were ultimately dropped as fieldwork locations after the sudden eruption of violence in Juba in July 2016 that forced research staff to evacuate the country. The two locations were eventually replaced by Aweil and a second, repeated round of the survey in Juba. (See “Sample Design and Strategy” below.)

#### INTERNATIONAL CASE STUDIES

In the original project design, international case studies of alternative service delivery models were to be integrated into the final report. After the interruption of the fieldwork implementation following the armed conflict that took place in Juba in July 2016, the *International Case Studies Report* was introduced as a standalone deliverable to prepare for the final report and bridge the period between the July 2016 interruption and the resumption of fieldwork. The report focuses on case studies of successful and innovative alternative service delivery models employed outside of South Sudan, also from conflict-affected contexts, and assessed as relevant to the local context. The report drew on a desk review and key informant interviews and was completed in October 2016 from Nairobi, Kenya. The case studies from the report have been incorporated into the recommendations presented in chapter 7.

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<sup>23</sup> The six criteria are: effectiveness, contribution to social cohesion, sustainability, scalability, presence of diversified models of service delivery, and integration with local government.

## QUANTITATIVE COMPONENT—DESIGN

The methodological approach to quantitative data collection conducted for this study was fully detailed in the methodology note submitted prior to the fieldwork. The following section summarizes the methodology for the survey and describes the changes in methodology necessitated by the July 2016 security crisis in Juba.

### SAMPLE DESIGN AND STRATEGY

The survey was designed to collect household-level data to enable an evaluation of the targeted alternative service delivery models. Randomized sampling methodology was employed, resulting in a representative sample on the level of each targeted city that included resident households and internally displaced persons.

**SAMPLE DESIGN.** To ensure the sample was representative of each urban center, its size was set at 400 respondents for each targeted location,<sup>24</sup> for a total of 1,200 interviews. The survey was intended to include internally displaced households. To ensure that this data would have a relatively manageable margin of error, the sampling systematically allocated 100 interviews to internally displaced households per targeted urban area with the intention of employing weights in the final analysis based on the estimated proportion of these households in each city.

**SAMPLING STRATEGY.** The sampling strategy followed a multistage stratified sampling methodology. The sampling was carried out in stages using smaller and smaller sampling units at each stage:

- **The first stage of sample selection was defined at the urban center level.** A purposive sampling strategy was employed based on the size of the urban center, presence of service delivery models and accessibility of the location in terms of security. Initially, Juba, Wau, and Yei were proposed as fieldwork locations for the *Service Delivery Status Report*. Following the July 2016 security crisis, Wau and Yei both became sites of active fighting and were therefore eliminated from the sample. When fieldwork was relaunched in November 2016, the location was changed to Aweil—one of the few accessible urban centers relatively untouched by the recent fighting; and a second round of the survey was conducted in Juba to evaluate the impact of the crisis on access, quality, cost, and accountability of service delivery (see Box A.1 below).
- **The second stage of sample selection was defined at the enumeration-area level.** The National Bureau of Statistics was asked to extract an ordered list of the enumeration areas, selected at random, with a probability proportional to size, using the sampling frame derived from the 2008 census and held by the bureau. Maps of the urban area sampling frame and the selected enumeration areas were overlaid with satellite imagery by Altai Consulting to ensure that borders of the urban area as defined by the bureau corresponded to actual settlements and that no selected enumeration area was empty or almost empty of households. In total, 20 enumeration areas were selected in each urban location, with additional three selected as potential replacements.
- **The third stage of sample selection was defined at the household level.** Enumerators were provided with enumeration area maps on their smartphones and were shown how to use the GPS (Global Positioning System) to determine their own location and ensure that it is within the boundaries of the enumeration area. Random walk protocol with fixed interval of five homes or compounds was used to select households, with enumerators free to choose their starting point. In total, 20 households were sampled in each enumeration area.

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<sup>24</sup> Based on the 2008 Sudan census data, this translates in a margin of error due to sampling of 4.9 percent at the 95 percent confidence level, for analyses done at the city level.

During the second round of Juba survey (see box A.1), enumerators were given contact details and a map showing the location of the original household and asked to locate households from the first round of the survey. Where original households could not be found, enumerators were asked to replace that household with the household residing in the same location or at the nearest available location, as shown on the map.

- **The fourth stage of sample selection was defined at the respondent level.** For the purpose of this survey, respondents are defined as heads of the targeted household. Respondents were instructed to answer questions on behalf of the household, and no quotas were imposed on male and female participants. In cases where several families shared the same household, for example, a resident family hosting an internally displaced family, enumerators were instructed to treat the two as independent households and to interview both.

### Box A.1. Conflict in Juba and the Second Juba Survey

#### Conflict in Juba and the Second Juba Survey

The return of armed conflict between the Sudan People Liberation Army and the Sudan People Liberation Army-in-Opposition in Juba July 7–8, 2016, significantly impacted the research for this study. When the fighting started, the **first round of the survey in Juba had just been completed** and the Wau and Yei fieldwork was planned to start the following week. While none of the national and international staff participating in the study were injured or otherwise personally affected by the fighting, the decision was made to withdraw international staff from South Sudan and to **temporarily suspend all activities** in the country.

Once return of staff to South Sudan became again possible in the fall of 2016, Aweil in the former Northern Bahr el-Ghazal was assessed as the only urban center outside of the capital sufficiently untouched by the conflict to enable fieldwork and staff were sent to **Aweil in December 2016**. As no suitably safe urban center was found to replace the third survey location, it was proposed to **repeat the survey for the second time in Juba** in December 2016 and to use the resulting data to **compare access to services immediately before and six months after an armed conflict** in an urban center impacted by the conflict. Conclusions drawn from this data are presented in Chapter 6 of the report.

## QUESTIONNAIRE DESIGN

The research team developed a questionnaire covering the four selected service delivery sectors, as well as separate sections with specific questions on socio-demographics, perceptions of safety and security, and internal displacement status. The questionnaire was organized around the key themes of access, cost, quality, and accountability as they relate to the identified service sectors.

The questionnaire was designed as a quantitative, close-ended instrument. The tool was then contextualized and pretested in Juba over the course of two days to ensure accuracy and ease of use. The number and variety of local languages spoken in South Sudan—particularly in Juba (see chapter 2)—made it impossible to develop a version in the local language. Instead, research staff made sure that each enumerator had a full understanding of every question that enabled them to translate into local languages as necessary.

The final questionnaire was digitized to facilitate mobile data collection. The tool was digitized in eXtensible Markup Language (XML) format and processed using an online mobile data collection platform. The three versions of the survey questionnaire, corresponding to the three rounds of survey, are attached to this report. (The different versions of the questionnaire were the result of changes to fieldwork location, as described above.)

## QUALITATIVE COMPONENT—DESIGN

The qualitative data collection formed a substantial component of the overall fieldwork, with an Altai Consulting researcher spending at least a week conducting interviews at each location concurrently with the survey implementation. The qualitative data was used to contextualize survey results and to provide information from the point of view of the government and the service providers, neither of which were targets for the survey.

### KEY INFORMANTS AND FOCUS GROUP DISCUSSION PARTICIPANTS

A preliminary list of targeted key informants was drawn up during the methodology design stage, with each researcher then adapting the list based on the availability and relevance of the identified individuals. Table A.1 summarizes the overall number of key informant interviews per informant category. See appendix B for a full of interviews.

**Table A.1. Completed Qualitative Interviews**

Service Sector	Respondent Category	Number of Interviews
Primary education	Government	7
	Service providers	11
Basic health care	Donors	2
	Government	6
	Service providers	7
Utilities	Government	3
	Service providers	4
<b>TOTAL</b>		<b>41</b>

In addition, in December 2016, focus group discussions targeting service consumers were conducted—one in Juba and one in Aweil. The one planned for July 2016 in Juba was disrupted by the conflict. Participants were drawn from the survey respondents who expressed to the enumerator a willingness to participate and who demonstrated knowledge of all four targeted service sectors.

### INTERVIEW/FOCUS GROUP DISCUSSION GUIDELINE DESIGN

An **open-ended key informant interview guideline** was developed by the research team for each targeted service delivery sector and divided into sections based on the categories of respondents listed above. Similar to the survey questionnaire, the **key informant interview and focus group discussion guidelines** were **organized around the four key themes** of accessibility, cost, quality, and accountability of service delivery models. During the analysis phase, responses under each theme were then collated and compared. During the second round of the survey, the key informants were also asked about the impact of the July conflict on service delivery in their sector.

## FIELDWORK IMPLEMENTATION

As described above, fieldwork was conducted in two phases. The first phase took place at the end of June and beginning of July 2016 and was interrupted by the armed conflict in Juba that began on July 7. The second phase of data collection took place in December 2016 once it was possible to safely resume fieldwork in some locations.

### FIELD DATA COLLECTION

**The data was collected by two data collection teams of six enumerators each in Juba and Aweil, respectively.** In each city, the implementation was led by a fieldwork coordinator responsible for managing the teams, monitoring their day-to-day activities, and reporting back to the principal researcher responsible for overall (quantitative and qualitative) fieldwork in the area. The enumerators and the fieldwork coordinator were trained on the survey instrument and sampling strategy by the principal researcher; they were required to pass a test demonstrating their ability to navigate the enumeration area map using GPS before being allowed to proceed.

Table A.2 summarizes the outcome of the three completed rounds of the survey.

**Table A.2. Completed Quantitative Interviews**

	Juba (July 2016)	Juba (December 2016)	Aweil (December 2016)
Targeted sample	400	400	400
Completed sample	405	407	421
Number of internally displaced households	30	9	38

### LIMITATION AND CHALLENGES

**LOCATING INTERNALLY DISPLACED HOUSEHOLDS.** As explained above, internally displaced households were oversampled during the initial sample design to ensure that enough data was collected to facilitate representative analysis. During data collection, enumerators were instructed to proceed with random household selection and to indicate in the questionnaire whether the interviewed household was classified as internally displaced or resident. Survey data was uploaded and monitored on daily basis and when the proportion of internally displaced households did not reach 25 percent after the first three days of data collection, enumerators were instructed to switch to chain-referral sampling<sup>25</sup> to maximize the number of interviews with internally displaced households in the enumeration area.

Chain referral was employed in Juba in July 2016 and in Aweil in December 2016, but did not lead to a sufficient number of interviews. As securing more interviews with this group would require a break with the sampling strategy at the enumeration-area level by allowing the enumerators to leave the randomly selected areas and seek out areas within the cities with known high concentrations of internally displaced persons, it was decided to replace the missing interviews with resident households selected in keeping with the sampling strategy. The proportion of internally displaced households in the sample is therefore representative of the targeted areas, but the sample size is not sufficiently large to draw strong conclusions about the internally displaced population at large. Nevertheless, an analysis of the available data is presented in chapter 6.

<sup>25</sup> Chain-referral is a nonprobability sampling technique, where respondents introduce enumerators to other respondents within their network. In this case, internally displaced families were asked to introduce enumerators to other internally displaced families living in the area.

**LOCATING HOUSEHOLDS DURING THE SECOND ROUND OF JUBA SURVEY.** During the second round of survey in Juba in December 2016, enumerators were instructed to locate the respondents originally interviewed in July, using the location of the original interview and respondent contact details, where available. This effort was partially successful. In total, 65 percent of the original households were revisited and interviewed, while 35 percent households had to be replaced with new households (18 percent were identified as having moved away by their neighbors, 13 percent could not be found at their home, and 4 percent refused to be interviewed for a second time).

As shown in appendix B, the sociodemographic attributes did not vary substantially between households that were found for the second survey and households that were not.

## APPENDIX B. JUBA RESPONDENT PROFILE

The second round of the Juba survey (December 2016) was designed to conduct a second round of interviews of all the respondents from the first round (July 2016), but in practice, 65 percent of the respondents from the first round were found; 35 percent had to be replaced with new households located close to the original household location. (see appendix A).

To establish whether a significant relationship exists between the sociodemographic attributes of the round one respondents and their status with respect to round two (regardless if they were found or not), a Chi-squared test was conducted to test the null hypothesis of independence.<sup>26</sup> The resulting p-values are presented in table B.1, which shows that there is no significant relationship between respondent sociodemographic attributes and whether they left Juba after the conflict.

**Table B.1. Chi-squared Test**

Attribute	Test	P-value
<b>Gender</b>	chi2(1)	0.681
<b>Age</b>	chi2(5)	0.112
<b>Education</b>	chi2(7)	0.658
<b>Language</b>	chi2(5)	0.35

Table B.2 details the variation among the four sociodemographic variables in the aggregate Juba sample (including all interviews with unique respondents from round one and round two), the group of found households, and the group of attrition households.

**Table B.2. Survey Respondent Characteristics, Juba**

Variable	Category	Aggregate	Found back	Attrition
<b>Gender</b>	Female	64%	63%	65%
	Male	36%	37%	35%
<b>Age</b>	18-24	13%	10%	14%
	25-34	36%	34%	42%
	35-44	23%	26%	20%
	45-54	16%	17%	17%
	55-64	7%	9%	4%
	> 65	5%	5%	4%
<b>Education</b>	None	14%	14%	20%
	Started Primary	26%	28%	23%
	Completed Primary	9%	10%	8%
	Started Secondary	13%	12%	12%
	Completed Secondary	18%	17%	15%
	Started University	3%	3%	5%
	Completed University	13%	15%	15%
<b>Language</b>	Arabic	9%	3%	2%
	Bari	24%	26%	31%
	Dinka	10%	11%	8%
	Latuko	5%	6%	5%
	Moru	11%	15%	8%
	Other	42%	40%	45%

<sup>26</sup> The Chi-square test was conducted with four sociodemographic variables (gender, age, education, and main language) and a dummy variable indicating respondent status (one if the respondent was found in round 1; zero otherwise). The p-values are all above 0.1, therefore the null hypothesis of independence holds.

A logit model was implemented to estimate the impact of income on the binary variable "found." The model was the following:

$$Y = 1 \text{ if "found" ; } Y = 0 \text{ if "not found"}$$
$$Y = 1\{Y^* > 0\} = 1\{X'\beta_0 + \epsilon > 0\}$$

Where  $\epsilon$  is an error distributed by the standard logistic distribution

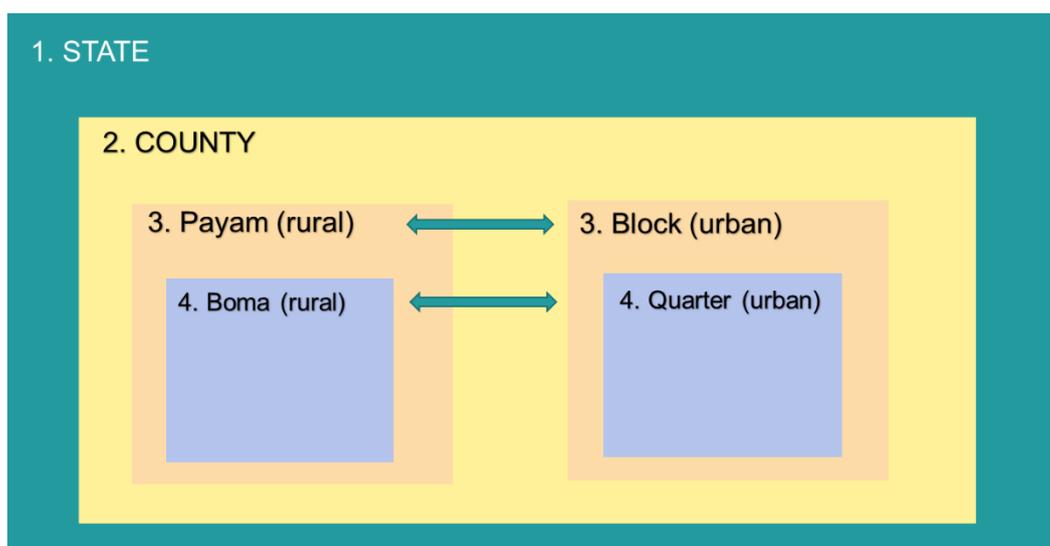
$$Y^* = \beta_{00} + \beta_{01} \text{income} + \epsilon$$

With a  $R^2$  of 0.003 and a p-value (associated to the income variable) of 0.3 (greater than the level of significance of 0.05), the results show that the income has no influence on the variable "found." Both variables are not correlated.

## APPENDIX C. STRUCTURE OF LOCAL GOVERNMENT IN RURAL AND URBAN AREAS

As defined in the Local Government Act 2009, the local government administrative structure in South Sudan distinguishes between rural and urban areas at the subcounty level. *Payams* in rural areas correspond to *blocks* in urban areas and *bomas* to *quarters*. Both urban and rural local government structures retain the same authority and responsibilities as delineated in the law. Note that in big urban areas, such as Juba, the block executive tends to be more developed and involved in service delivery than most counties in rural areas.

Figure C.1. Rural and Urban Local Government Structure



## APPENDIX D. LIST OF KEY INFORMANTS INTERVIEWED

Location	Name	Position	Organization	
JUBA, June and July 2016	1	Milka Choge	Health adviser	Department for International Development
	2	Dominic Duku	Project officer	Stromme Foundation
	3	Juma Hassan	Head	Juba County Water Department
	4	William Cesar Lege	Head teacher	ELOI Nursery and Primary School
	5	John Peter Malish	Field operations manager	Crown Agents
	6	Celestino Nigit Keny	Headmaster	St. Kizito Primary School
	7	Gordon Lagu	Headmaster	Munuki East Primary School
	8	Justin Nyoma	Head	Juba County Health Department
	9	Moses Milia	Head	Health Management Information System, Ministry of Finance
	10	Basilica Modi	Senior health program officer	United States Agency for International Development (USAID)
	11	Kamal Musa	Head, Rajaf payam	Juba County Education Department
	12	Pitia Peter Philip	Head teacher	Juba Proper International Day and Boarding School
JUBA, December 2016	13	Hakim Daniel	Director	Juba Directorate of Education
	14	Dominic Duku	Project officer	Stromme Foundation
	15	Juma Hassan	Head	Juba County Water Department
	16	Amna Juma	Manager and clinical officer	Kator Primary Health Care Center
	17	Scovia Kareo	Water reseller	Self-employed
	18	Celestino Nigit Keny	Headmaster	St. Kizito Primary School
	19	William Cesar Lege	Head teacher	ELOI Nursery and Primary School
	20	Michael Lopuke Lotyam	Undersecretary	National Ministry of Education, Science, and Technology
	21	Moses Milia	Head	Health Management Information System, Ministry of Finance
	22	Lawrence Busuk Muludyang	Deputy director for planning	South Sudan Urban Water Corporation
	23	Appolo Musa	Water reseller	Self-employed
	24	Justin Nyoma	Head	Juba County Health Department
	25	Ismael Ochaya	Clinic manager	ECLAT clinic
	26	Cristina Paro	Project manager	Usratuna
JUBA, December 2016	27	Pitia Peter Philip	Head teacher	Juba Proper International Day and Boarding School
	28	Telvin Samy	Water truck driver	Self-employed
	29	Alfred Samson	Head of the quality promotion directorate	Ministry of Education, Science, and Technology
	30	Hawart Sseppuya	Doctor	ECLAT clinic

Location	Name	Position	Organization	
AWEIL, December 2016	31	Jok Bol	Head teacher	St. Mary's Primary School
	32	Simon Yak Chor	Public health observance and control	Municipal Council Public Health Department
	33	Valentino Anei Deng	Director	Quality Assurance, Ministry of Education, Science, and Technology
	34	Mary Anoon Deng	Midwife	Primary Health Care Center
	35	Archangelo Diin	Head teacher	South Sudan Education Centre
	36	Cleto Gai	Head	Water Department, Municipal Council
	37	John Majok	Senior inspector for public health	Municipal Council
	38	Paolo Maker Malual	Manager	Primary Health Care Center
	39	Lona Tabu	Team leader, Girls Education South Sudan	UMCOR United Methodist Committee on Relief
	40	Akok Yel	Head teacher	Aweil National
	41	n/a	Water reseller	Self-employed