



# Sudan

## Sudan Household Health Survey 2<sup>nd</sup> Round 2010

### Summary Findings

*June, 2011*

**Federal Ministry of Health**

**Ministry of Health, Government of South Sudan**

**Central Bureau of Statistics**

**Southern Sudan Centre of Census, Statistics & Evaluation**



The Sudan Household Health Survey 2<sup>nd</sup> (SHHS2) round was carried out in 2010 in partnership between the Government of National Unity (GONU) and Government of South Sudan (GOSS) and the following regional and international organizations: UNICEF, UNDP, WHO, UNFPA, WFP, USAID PAFAM/ League of Arab States. Financial and technical support was provided by the Government of National Unity (GONU) and Government of Southern Sudan (GOSS), UNICEF and other UN agencies and international organizations

The methodology and content of SHHS2 is based on the Multiple Indicator Cluster Survey (MICS), an international household survey programme developed and supported by UNICEF. The SHHS2 was conducted as part of the fourth round of MICS surveys (MICS4). SHHS2 provides up-to-date information on the situation of children and women and measures of key indicators that allow countries to monitor progress towards the Millennium Development Goals (MDGs) and other internationally agreed upon commitments.

# INTRODUCTION

This report presents selected results on some of the key topics covered in the survey and on a subset of indicators<sup>1</sup> demonstrated separately for Sudan Northern States and Sudan Southern States. The results in this report are preliminary and are subject to change. A full report for North and South Sudan is scheduled for publication in September 2011. Fieldwork was carried out in the Northern States during March - April 2010 and in the Southern States between March - May 2010.

	<i>Number completed</i>	<i>Response rate</i>
<b>Northern States</b>		
Household questionnaires	14,778	99.0
Questionnaires for individual women (age 15-49)	17,174	91.4
Questionnaires for children under five	13,282	96.8
Questionnaires for men (age 15-49)	5,573	33.6
<b>Southern States</b>		
Household questionnaires	9,369	96.0
Questionnaires for individual women (age 15-49)	9,069	75.3
Questionnaires for children under five	8,338	79.7
Questionnaires for men (age 15-49)	4,345	48.2

The standard MICS4 questionnaires<sup>2</sup> were adapted to the country context; additional country specific modules were also added.

<b>Household Questionnaire</b>	<b>Questionnaire for Individual Women (age 15-49)</b>	<b>Questionnaire for Children under Five</b>	<b>Questionnaire for men (age 15-49)</b>	<b>Food Security Questionnaire</b>
Household information panel	Women information panel	Children information panel	Men information panel	Food security information panel
Household listing form	Women's background	Age	Men's background	Income sources
Education	Child mortality	Birth registration	Marriage	Expenditures
Female Genital Mutilation	Desire for last birth	Care of illness	Circumcision	Food consumption and dietary diversity
Chronic diseases & injuries*	Maternal & newborn health	Malaria	Condom	
Tobacco use*	Illness symptoms	Immunization	Sexual behaviour	
Child disability	Contraception	Vitamin A	STIs	
Water & sanitation	Unmet need	Anthropometry	HIV/AIDS	
HH characteristics	Marriage/ union	Breastfeeding		
Insecticide Treated Nets	HIV/AIDS	Early childhood development		
Salt iodization	Birth history			
	Female Genital Mutilation			
	Attitudes towards domestic violence			

<sup>1</sup> For more information on the definitions, numerators, denominators and algorithms of indicators covered in MICS4 see [www.childinfo.org](http://www.childinfo.org).

<sup>2</sup> See [www.childinfo.org](http://www.childinfo.org) for standard MICS4 questionnaires.

* Northern States only	Sexual behaviour** STIs ** Southern States only			
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# FINDINGS

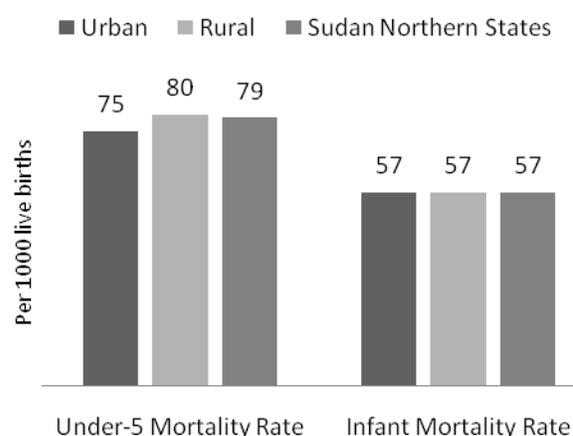
## CHILD MORTALITY

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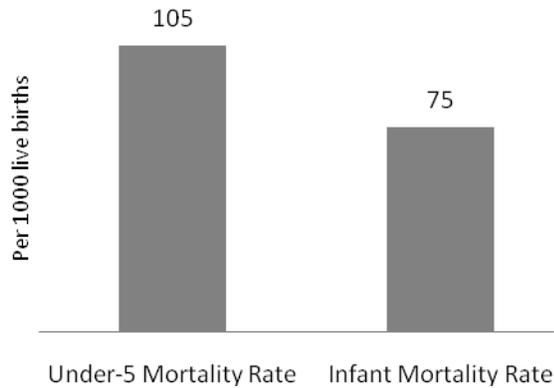
Infant and under-five mortality rates may be calculated by using information collected from full birth histories or from summary birth histories administered to women age 15-49 years. When full birth histories are used, information on sex, month and year of birth, survivorship status and current age, or, if the child had died, age at death are used to directly calculate infant and under-five mortality rates. Summary birth histories are used to collect information on the total numbers of children ever born, children surviving and children deceased, and this information is used to perform indirect calculations of child mortality.

For Sudan Northern States, the direct method of calculation was used. The results show that the infant mortality rate in the five years preceding the survey is 57 per 1,000 live births and under-five mortality is 79 deaths per 1,000 live births, for the same period. These results indicate that the majority (72 percent) of under-five deaths are infant deaths. Infant mortality rates are identical for urban and rural areas whereas under-five mortality rates are very similar in rural and urban areas.

**Figure 1-N. Under-5 Mortality Rates and Infant Mortality Rates, Sudan Northern States, 2010**



**Figure 1-S. Under-5 Mortality Rates and Infant Mortality Rates, Sudan Northern States, 2010**



Infant and under-5 mortality rates have been estimated by using the indirect method for Sudan Southern States<sup>3</sup>. The results show that the under-5 mortality rate is 105 per 1,000 live births, and infant mortality rate is 75 per 1,000 live births, approximately for a period centred on 6 years prior to the survey date.

Child mortality estimates based on the direct method will be presented in the final report<sup>4</sup>.

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<sup>3</sup> The Coale-Demeny West Family of Life Tables is used for indirect estimation. This model is used in the absence of direct evidence on the age pattern of mortality below age 5.

<sup>4</sup> Work on birth histories collected in the SHHS2 in Southern Sudan is ongoing, mainly on the large number of births with missing information on date of birth and age at death. Demographic methods are being used to finalize direct estimates of child mortality.

## NUTRITION

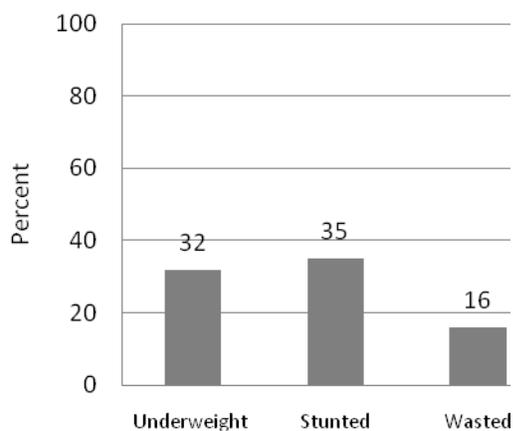
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### *Child Nutritional Status*

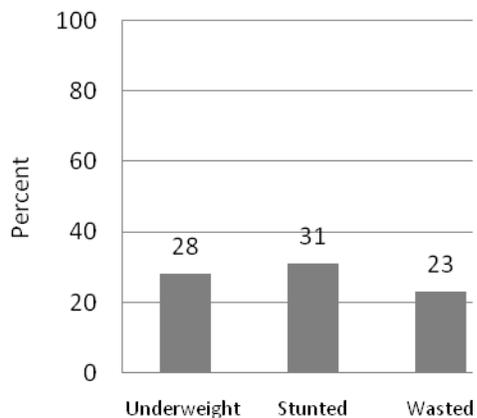
The key indicators for monitoring the nutritional status of a child under the age of five are underweight (weight-for-age), stunting (height-for-age) and wasting (weight-for-height).

In Sudan Northern States 32 percent of children under age five are underweight, 35 percent are stunted and 16 percent are wasted.

**Figure 2-N. Percentage of children under age 5 who are underweight, stunted and wasted, Sudan Northern States, 2010**



**Figure 2-S. Percentage of children under age 5 who are underweight, stunted and wasted, Sudan Southern States, 2010**



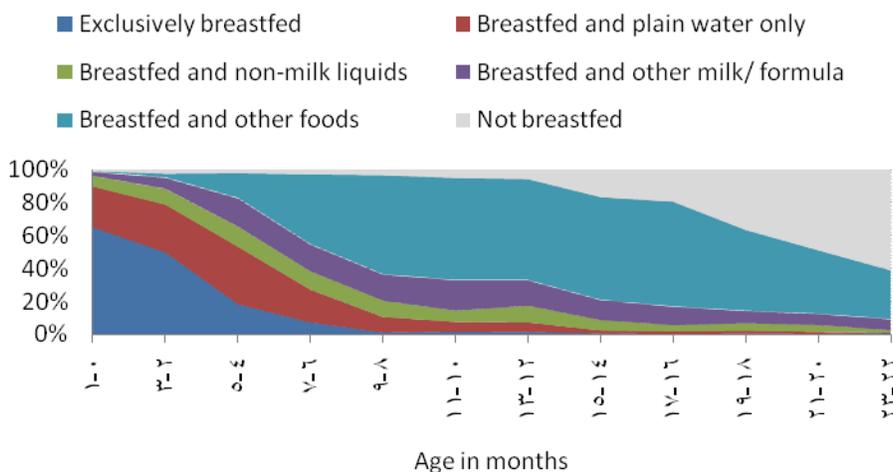
In Sudan Southern States 28 percent of children under age five are underweight, 31 percent are stunted and 23 percent are wasted.

## Breastfeeding

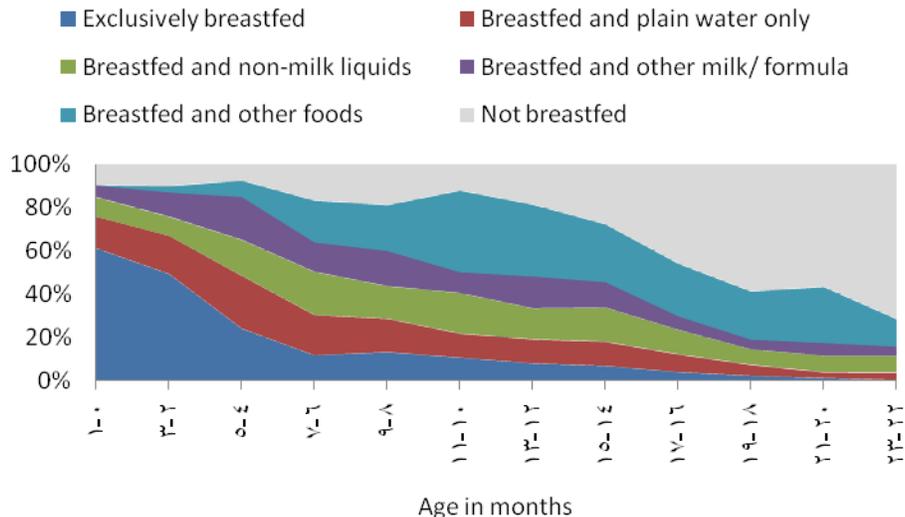
Figure 3-N and Figure 3-S show the detailed pattern of breastfeeding by the child's age in months. About 65percent of 0-1 month old children are exclusively breastfed in Sudan Northern States. Among children who are 2-3 months old the percentage of children that are exclusively breastfed declines and about 50 percent of children receive liquids or foods other than breast milk. By the sixth month, the percentage of children that are exclusively breastfed is only 18 percent.

About 61 percent of 0-1 month old children are exclusively breastfed in Sudan Southern States. Among children who are 2-3 months old the percentage of children that are exclusively breastfed declines and about 51 percent of children receive liquids or foods other than breast milk. By the sixth month, the percentage of children that are exclusively breastfed is only 29percent

**Figure 3-N. Percent distribution of children under age 2 by feeding pattern by age group, Sudan Northern States, 2010**



**Figure 3-S. Percent distribution of children under age 2 by feeding pattern by age group, Sudan Southern States, 2010**



**Table 3. Findings for selected breastfeeding indicators**

**Sudan Northern States, 2011**

Exclusive breastfeeding under 6 months	41	Percent
Continued breastfeeding at 1 year	88	Percent
Continued breastfeeding at 2 years	40	Percent
Introduction of solid, semi-solid or soft foods (children 6-8 months)	51	Percent

**Sudan Southern States, 2011**

Exclusive breastfeeding under 6 months	45	Percent
Continued breastfeeding at 1 year	82	Percent
Continued breastfeeding at 2 years	38	Percent
Introduction of solid, semi-solid or soft foods (children 6-8 months)	21	Percent

In Sudan Northern States 41 percent of children under age 6 months are exclusively breastfed. At two years a similar percentage continues breastfeeding. Half of the children 6-8 months start solid, semi-solid or soft foods.

In Sudan Southern States 45 percent of children under age 6 months are exclusively breastfed. At two years 38 percent continue breastfeeding. Twenty percent of the children 6-8 months start solid, semi-solid or soft foods.

## CHILD HEALTH

### Immunization

In Sudan Northern States 75 percent of children have received BCG vaccination, 58 percent have received three doses of DPT HB HIB and 62 percent have received three doses of polio vaccine. Sixty-two percent are immunized against measles.

Figure 4-N. Percentage of children age 12-23 months who received the recommended vaccinations by 12 months, Sudan Northern States, 2010

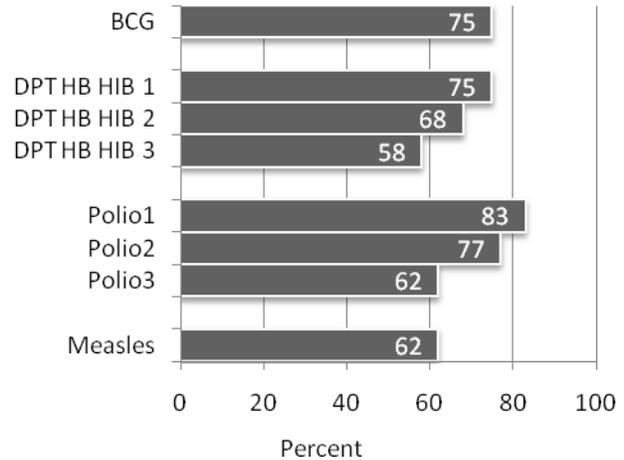
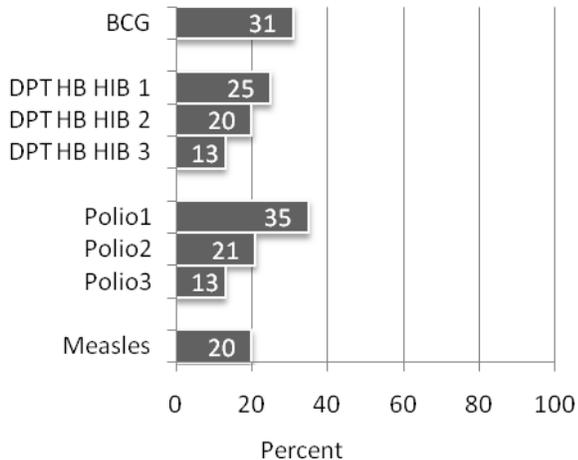


Figure 4-S. Percentage of children age 12-23 months who received the recommended vaccinations by 12 months, Sudan Southern States, 2010



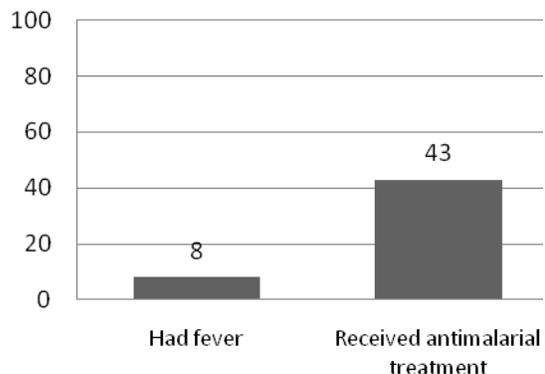
In Sudan Southern States 31 percent of children have received BCG vaccination, 13 percent have received three doses of DPT HB HIB and 13 percent have received three doses of polio vaccine. Twenty percent are immunized against measles.

## *Prevalence of Fever and Malaria Treatment*

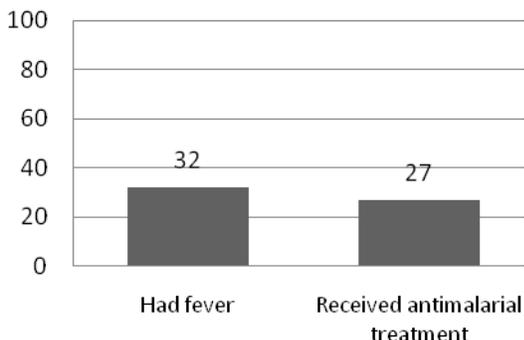
The main symptom of malaria is fever.

In Sudan Northern States 8 percent of children under age five had fever in the two weeks preceding the survey. Among these children 43 percent received antimalarial medicine on the same or next day.

**Figure 5-N. Percentage of children under age 5 who had fever and those with fever who received any antimalarial treatment, Sudan Northern States, 2010**



**Figure 5-S. Percentage of children under age 5 who had fever and those with fever who received any antimalarial treatment, Sudan Southern States, 2011**

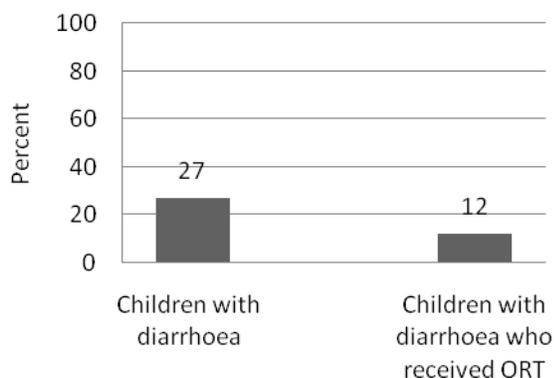


In Sudan Southern States 32 percent of children under age five had fever in the two weeks preceding the survey. Among these children only 27 percent received antimalarial medicine on the same or next day.

## Prevalence and Treatment of Diarrhoea

Dehydration caused by diarrhoea is a major cause of mortality and morbidity. The recommended treatment for diarrhoea in children is oral rehydration therapy (ORS packet or recommended homemade fluid or increased fluids) with continued feeding.

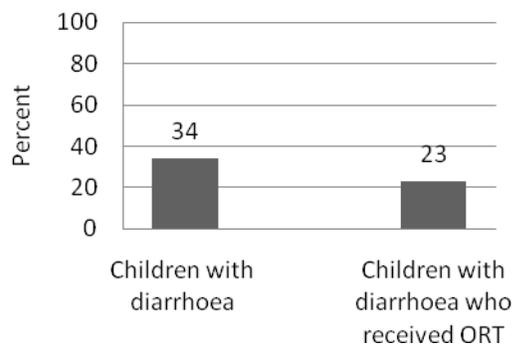
**Figure 6-N. Percentage of children under age 5 with diarrhoea and those with diarrhoea who received ORT (ORS packet or recommended homemade fluid or increased fluids) and continued feeding, Sudan Northern States, 2010**



In Sudan Northern States 27 percent of the children under age five had diarrhoea in the two weeks preceding the survey. Twelve percent of children with diarrhoea received the recommended treatment.

In Sudan Southern States 34 percent of the children under age five had diarrhoea in the two weeks preceding the survey. Twenty-three percent of children with diarrhoea received the recommended treatment.

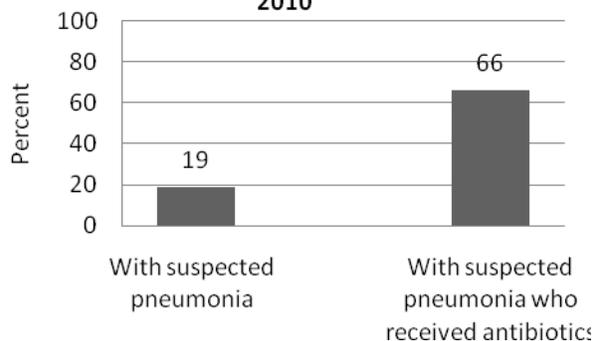
**Figure 6-S. Percentage of children under age 5 with diarrhoea and those with diarrhoea who received ORT (ORS packet or recommended homemade fluid or increased fluids) and continued feeding, Sudan Southern States, 2010**



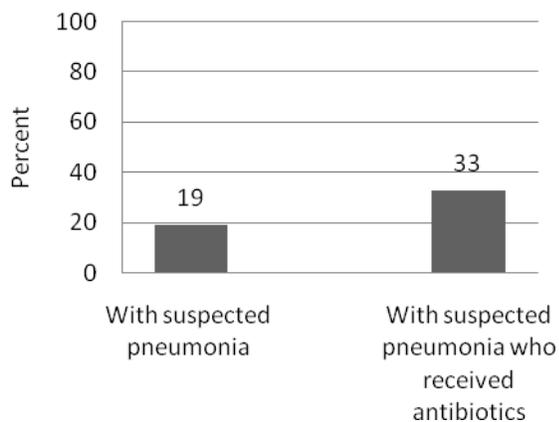
## *Prevalence and Antibiotic Treatment of Suspected Pneumonia*

Nineteen percent of children under age five in Sudan Northern States had symptoms consistent with pneumonia during the two weeks preceding the survey. Overall, 66 percent of children with suspected pneumonia received antibiotics.

**Figure 7-N. Percentage of children under age 5 with suspected pneumonia who received antibiotics, Sudan Northern States, 2010**



**Figure 7-S. Percentage of children under age 5 with suspected pneumonia who received antibiotics, Sudan Southern States, 2010**



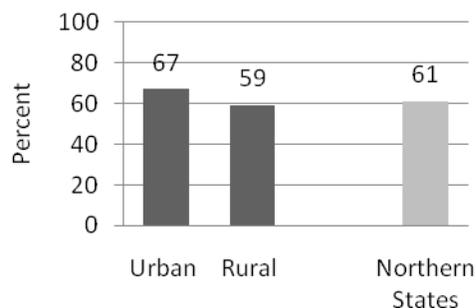
Nineteen percent of children under age five in Sudan Southern States had symptoms consistent with pneumonia during the two weeks preceding the survey. Overall, 33 percent of children with suspected pneumonia received antibiotics.

## WATER AND SANITATION

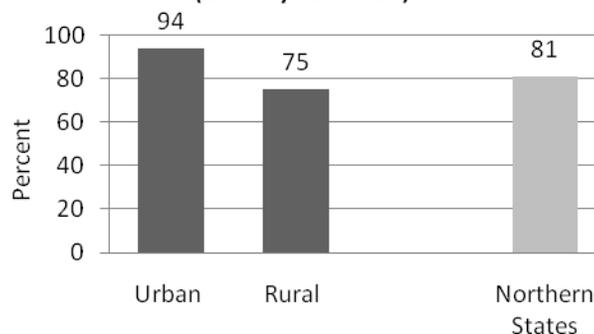
Overall, 61 percent of the population in Sudan Northern States use an improved water source as defined by the MDG indicator. There are differences between urban and rural areas: only 59 percent of household members in rural areas use an improved water source, while the corresponding percentage for urban areas is 67.

According to the country definition of improved water source which includes water transported from an improved source, the coverage figures increase to 81 percent. Ninety four percent of the urban population and 75 percent of the rural population have access to an improved source of drinking water.

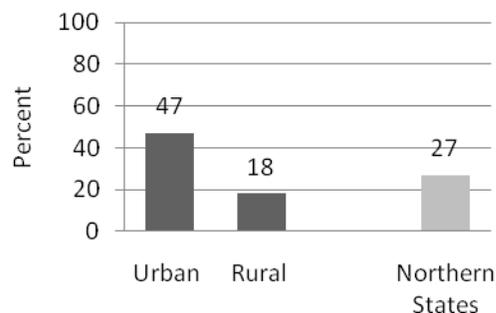
**Figure 8-N. Percentage of household members using improved sources of drinking water, Sudan Northern States, 2010**



**Figure 8A-N. Percentage of household members using improved sources of drinking water, Sudan Northern States, 2010 (Country definition)**



**Figure 9-N. Percentage of household members using improved sanitation facilities, Sudan Northern States, 2010**

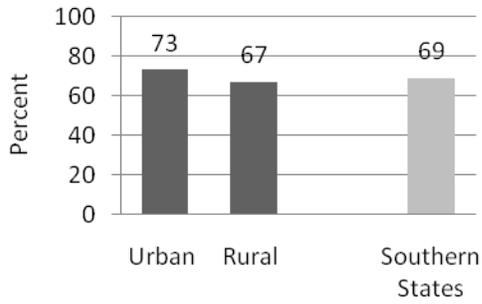


The sanitation indicator shows similar disparities: only 18 percent of household members in rural areas use an improved sanitation facility, while in urban areas 47 percent use an improved facility. Overall, 27 percent of household members use an improved sanitation facility.

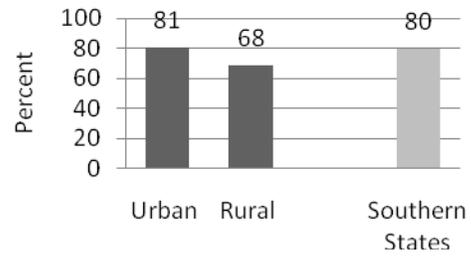
In Sudan Southern States 68 percent of the population use an improved water source. There are differences between urban and rural areas: 67 percent of household members in rural areas use an improved water source, while the corresponding percentage for urban areas is 73.

According to the country definition of improved water source which includes water transported from an improved source, the coverage figures increase to 80 percent. Eighty one percent of the urban population and 68 percent of the rural population have access to an improved source of drinking water.

**Figure 8-S. Percentage of household members using improved sources of drinking water, Sudan Southern States, 2010**

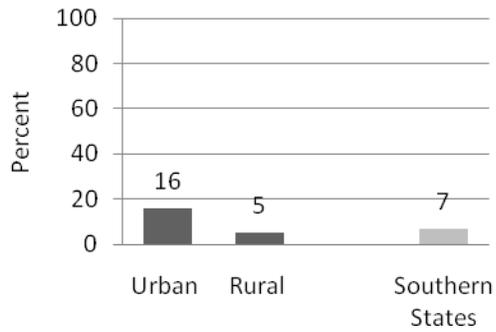


**Figure 8A-S. Percentage of household members using improved sources of drinking water, Sudan Southern States, 2010**  
**Country definition**



Only 7 percent of household members use an improved sanitation facility. Sixteen percent of household members in urban areas use an improved sanitation facility compared to a lower 5 percent in rural areas.

**Figure 9-S. Percentage of household members using improved sanitation facilities, Sudan Southern States, 2010**

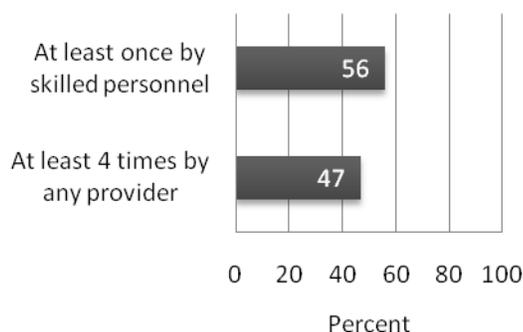


## REPRODUCTIVE HEALTH

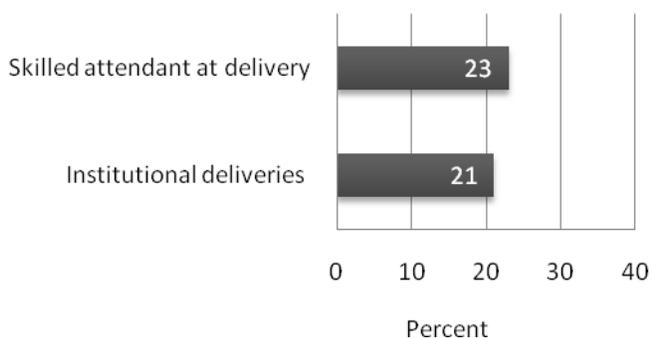
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Seventy-four percent of women age 15-49 years in Sudan Northern States with a live birth in the two years preceding the survey received antenatal care (ANC) at least once by skilled personnel and 47 percent received ANC at least 4 times by any provider. Twenty three percent were attended by doctor, health visitor, nurse midwife or medical assistant at delivery and 21 percent delivered in a health facility.

**Figure 10-N. Antenatal care coverage, Sudan Northern States, 2010**

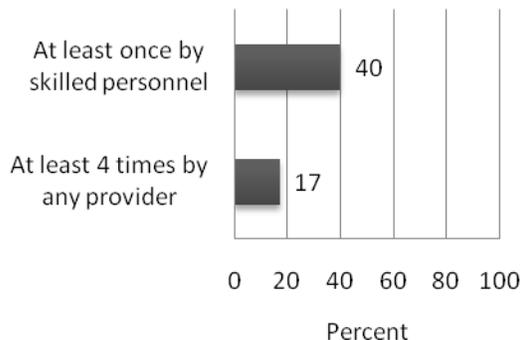


**Figure 11-N. Delivery care, Sudan Northern States, 2010**

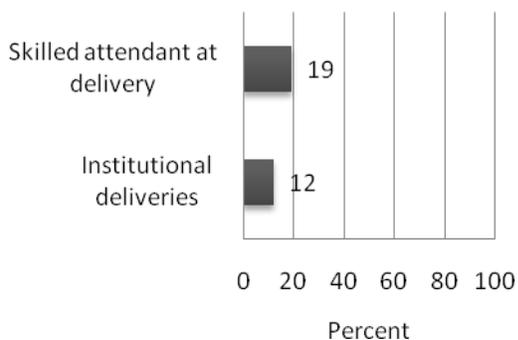


Forty-two percent of women age 15-49 years in Sudan Southern States with a live birth in the two years preceding the survey received antenatal care (ANC) at least once by skilled personnel and 17 percent received ANC at least 4 times by any provider. Nineteen percent were attended by a doctor, health visitor, nurse midwife or medical assistant at delivery and 12 percent delivered in a health facility.

**Figure 10-S. Antenatal care coverage, Sudan Southern States, 2010**



**Figure 11-S. Delivery care, Sudan Southern States, 2010**



<b>Table 4. Findings for selected reproductive health indicators</b>		
<b>Sudan Northern States, 2010</b>		
Total Fertility Rate	5.7	Children per woman
Adolescent Birth Rate	134	Per 1000 women
Contraceptive Prevalence Rate	9	Percent
Unmet Need	29	Percent
<b>Sudan Southern States, 2010</b>		
Total Fertility Rate	7.1	Children per woman
Adolescent Birth Rate	199	Per 1000 women
Contraceptive Prevalence Rate	4	Percent
Unmet Need	26	Percent

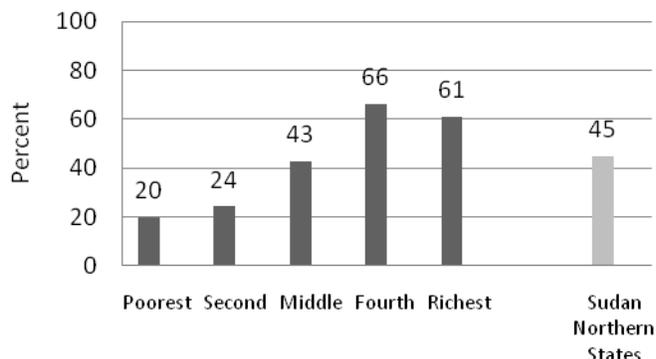
Only nine percent of married women age 15-49 years in Sudan Northern States use a contraceptive method and the unmet need for contraception (for either spacing or limiting births), is 29 percent. The adolescent birth rate is very high; 102 births per 1000 women age 15-19 years. Total fertility rate is 5.7 children per children woman.

In Southern Sudan, only four percent of married women age 15-49 years use a contraceptive method and the unmet need for contraception (for either spacing or limiting births), is 26 percent. The adolescent birth rate is very high; 199 births per 1000 women age 15-19 years. Total fertility rate is as high as 7.1 children per children woman.

## LITERACY AND EDUCATION

### *Literacy among young women*

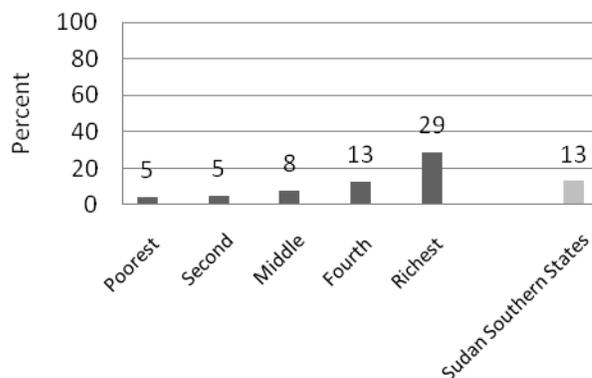
Figure 12-N. Literacy rates, young women age 15-24 years, by wealth quintiles, Sudan Northern States, 2010



Overall, in Sudan Northern States, only 45 percent of young women age 15-24 years are literate. Among women living in the poorest households, the literacy rate is as low as 20 percent. In contrast, the literacy rate is 61 percent among women in the richest households.

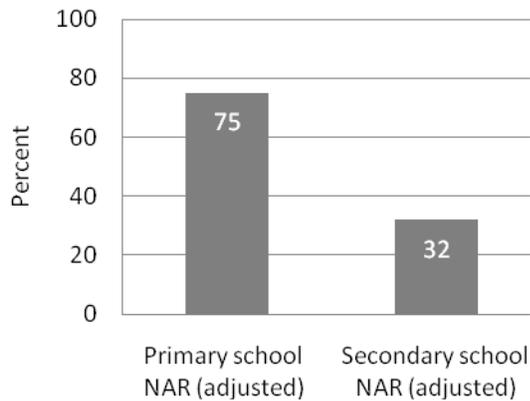
Overall, in Sudan Southern States, only 13 percent of young women age 15-24 years are literate. Among women living in the poorest households, the literacy rate is as low as five percent. In contrast, the literacy rate is 29 percent among women in the richest households.

Figure 12-S. Literacy rates, young women age 15-24 years, by wealth quintiles, Sudan Southern States, 2010

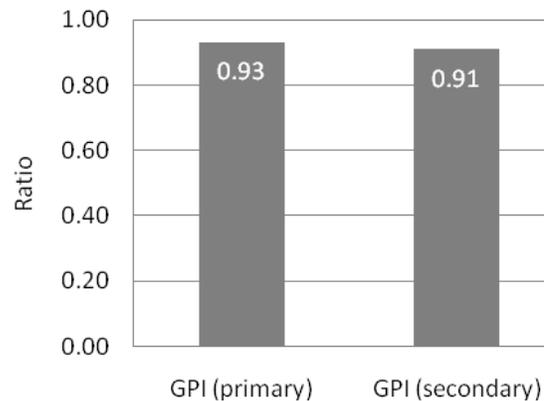


## School Attendance

**Figure 13-N. Primary and secondary school net attendance ratios (NAR) (adjusted), Sudan Northern States, 2010**

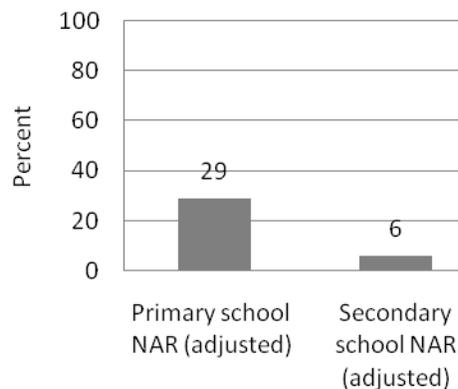


**Figure 14-N. Gender parity index (GPI) in primary and secondary school, Sudan Northern States, 2010**

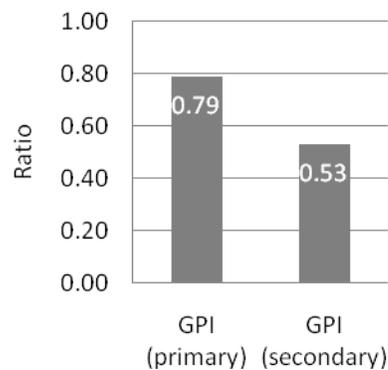


About 62 percent of children of primary school age in Sudan Northern States are attending primary school and only 32 percent of children of secondary school age are attending secondary school. More boys are attending primary school than girls; the Gender Parity Index (GPI) is 0.93. In secondary school the GPI drops further to 0.88, indicating that less girls than boys attend secondary school.

**Figure 13-S. Primary and secondary school net attendance ratios (NAR) (adjusted), Sudan Southern States, 2010**

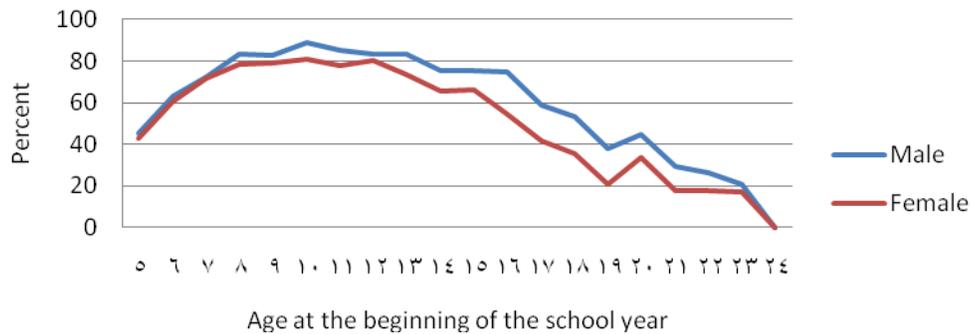


**Figure 14-S. Gender parity index (GPI) in primary and secondary school, Sudan Southern States, 2010**



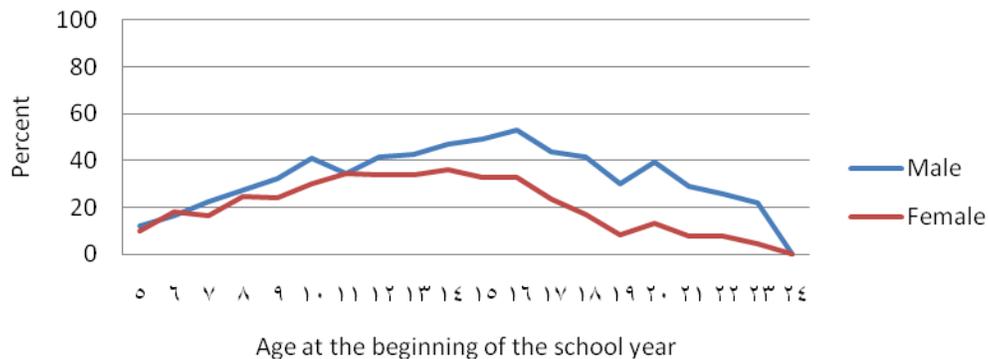
Only 29 percent of children of primary school age in Sudan Southern States are attending primary school and six percent of children of secondary school age are attending secondary school. More boys are attending primary school than girls; the Gender Parity Index (GPI) is 0.79. In secondary school the GPI drops markedly further to 0.53, indicating that much less girls than boys attend secondary school.

**Figure 15-N. Percentage of household members age 5-24 years attending school, by sex, Sudan Northern States, 2010**



In Sudan Northern States, few children of ages five and six are attending any form of school. Around 70 percent of 7 year olds are attending school; age 7 is the official school starting age in Sudan Northern States. School attendance increases slightly for children of age 7-11 and starts to decrease for children of age 12-14 years. For children between 15-17 years the school attendance drops quite dramatically the older the child gets. Fifteen to seventeen years is the official age range for upper-secondary school. Few household members above 20 years of age attend school. Gender differentials are generally small showing more boys than girls appear to attend school.

**Figure 15-S. Percentage of household members age 5-24 years attending school, by sex, Sudan Southern States, 2010**



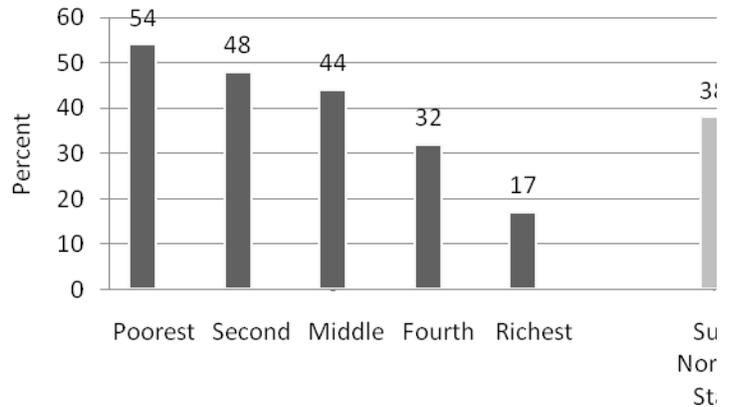
In Sudan Southern States, less than 20 percent children of ages five and six are attending any form of school. Only 23 percent of males and 16 percent of females of 7 year olds are attending school; age 7 is the official school starting age in Sudan Southern States. School attendance then increases slowly. For children between 15-17 years the school attendance drops the older the child gets. Fifteen to seventeen years is the official age range for upper-secondary school. Few household members above 20 years of age attend school, particularly females. Gender differentials are clear for children over age 11 showing more boys than girls attending school.

## CHILD PROTECTION

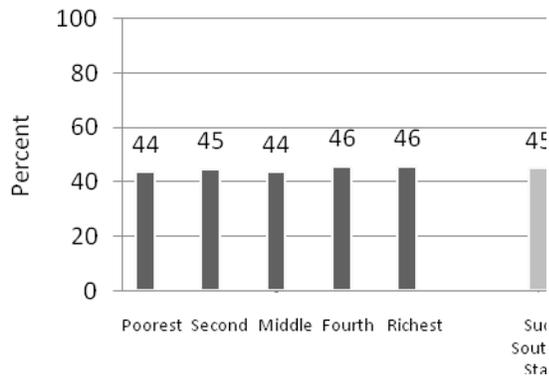
### Early Marriage

The percentage of women age 20-49 years who were first married before age 18 is 38 percent in Sudan Northern States. Differences by wealth quintiles exist; 54 percent of women from the poorest households were married before age 18, while only 17 percent from the richest households were married at this age.

**Figure 16-N. Percentage of women age 20-49 years who were married before age 18, by wealth quintiles, Sudan Northern States, 2010**



**Figure 16-S. Percentage of women age 20-49 years who were married before age 18, by wealth quintiles, Sudan Southern States, 2010**



The percentage of women age 20-49 years who were first married before age 18 is 45 percent in Sudan Southern States. This indicator does not vary by wealth quintiles.

## HIV/AIDS AND ORPHANS

### HIV/AIDS

About three quarters of all women in Sudan Northern States have heard of AIDS. Only 6 of young women age 15-24 years have comprehensive knowledge about HIV prevention and 34 percent correctly identify all three means mother-to-child HIV transmission. Nine percent of young women express accepting attitudes towards people living with HIV., These indicators are similar for all women age 15-49 years.

Figure 17-N. Percentage of women who have heard of AIDS, Sudan Northern States, 2010

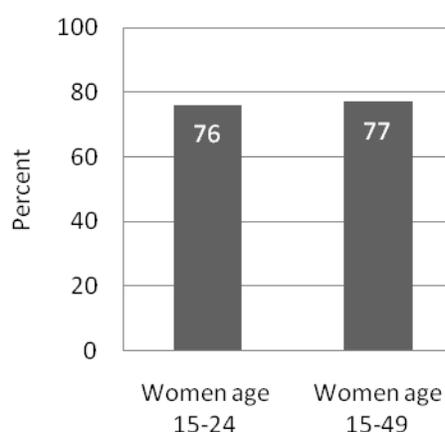
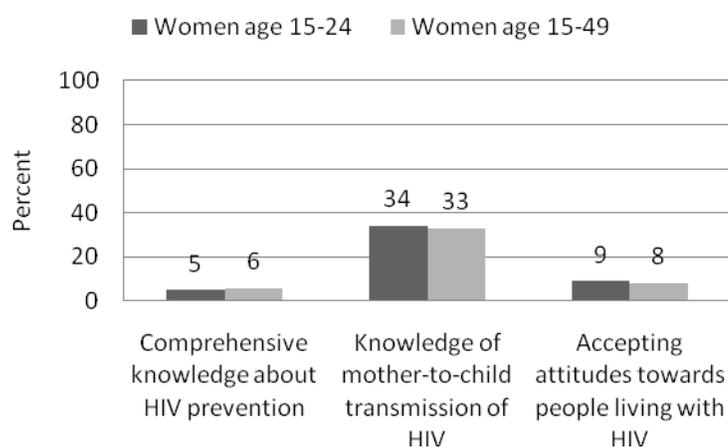
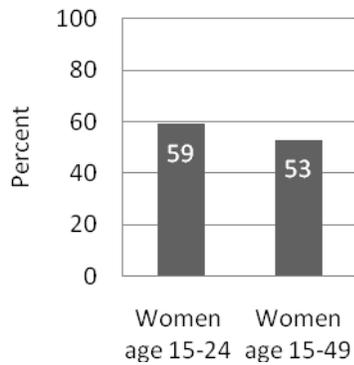


Figure 18-N. Knowledge about HIV/AIDS prevention and transmission and attitudes towards people living with HIV, for women age 15-24 and 15-49 years, Sudan Northern States, 2010



In Sudan Southern States about half of all women have heard of AIDS. Only 10 of young women age 15-24 years have comprehensive knowledge about HIV prevention and 13 percent correctly identify all three means mother-to-child HIV transmission. Ten percent of young women express accepting attitudes towards people living with HIV. Calculated for all women age 15-49 years, these indicators are slightly generally higher compared to women age 15-24 years.

**Figure 17-S. Percentage of women who have heard of AIDS, Sudan Southern States, 2010**



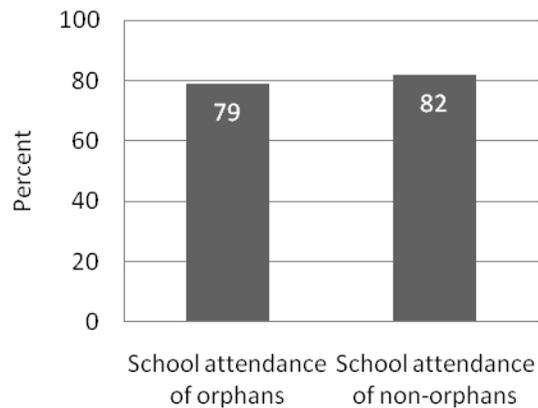
**Figure 18-S. Knowledge about HIV/AIDS prevention and transmission and attitudes towards people living with HIV, for women age 15-24 and 15-49 years, Sudan Southern States, 2010**



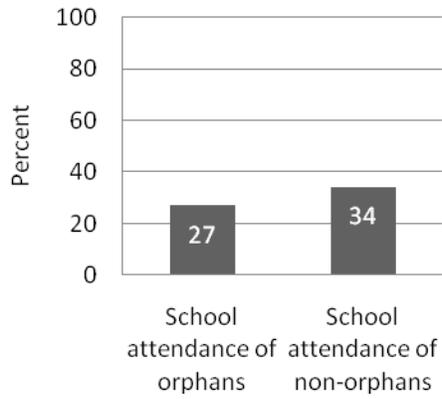
### *School Attendance of Orphans and Non-orphans*

In Sudan Northern States the school attendance rate among children 10-14 years who have lost both their parents is 79 percent. Among children of the same age, whose parents are alive, and who are living with a least one parent, the school attendance rate is 82 percent. The orphans to non-orphans school attendance ratio is 0.96.

**Figure 19-S. School attendance of orphans and non-orphans age 10-14 years, Sudan Northern States, 2010**



**Figure 19-S. School attendance of orphans and non-orphans age 10-14 years, Sudan Southern States, 2010**



In Sudan Southern States the school attendance rate among children 10-14 years who have lost both their parents is 27 percent. Among children of the same age, whose parents are alive, and who are living with a least one parent, the school attendance rate is 34 percent. The orphans to non-orphans school attendance ratio is 0.78