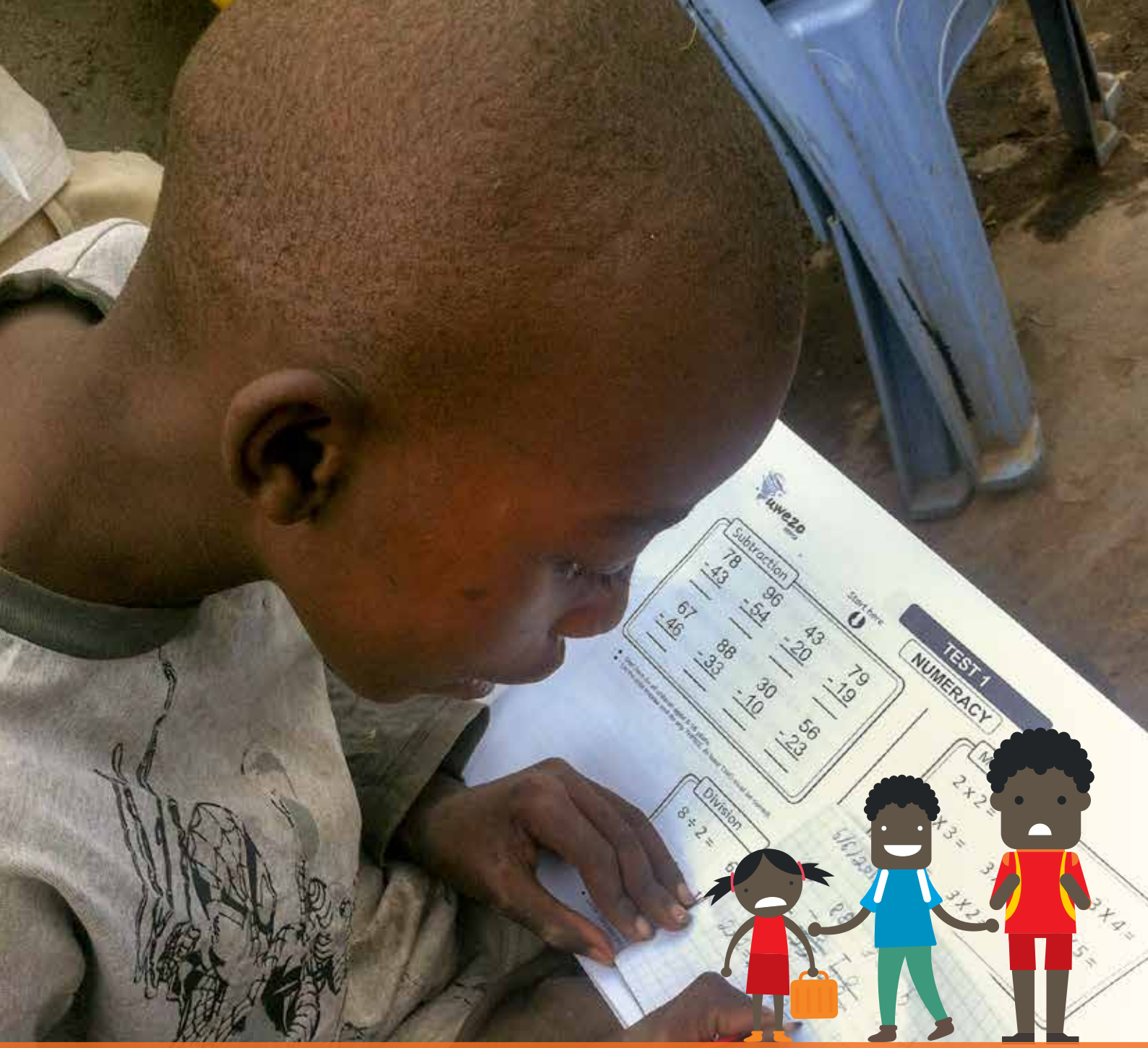


Are Our Children Learning (2016)?

UWEZO KENYA SIXTH LEARNING ASSESSMENT REPORT DECEMBER 2016

Uwezo KENYA

Twaweza ni sisi

THE UWEZO INITIATIVE IS SUPPORTED BY:
THE WILLIAM AND FLORA HEWLETT FOUNDATION AND AJWS.

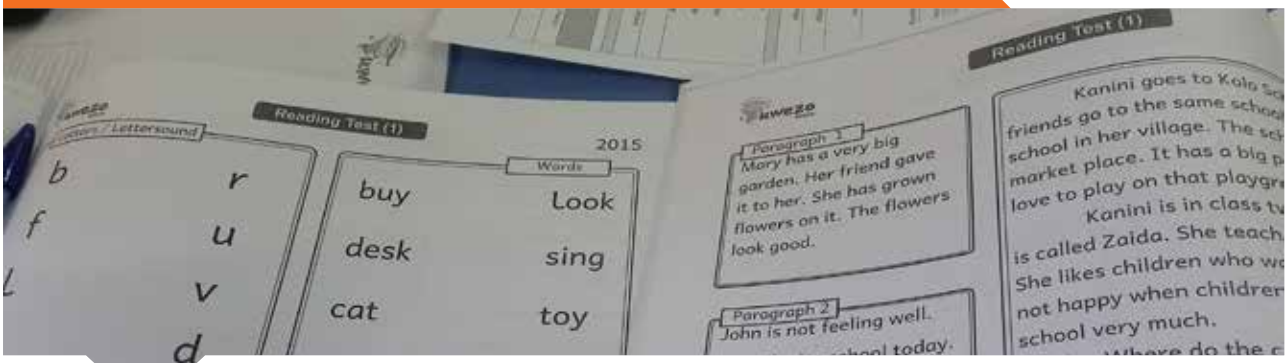
To cite this report:
Uwezo (2016): Are Our Children Learning? Uwezo Kenya Sixth Learning Assessment Report. Nairobi: Twaweza East Africa

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FOREWORD



Towards Sustainable Development Goal 4

Aidan Eyakuze and John Mugo

In May 2015, the world met in Incheon and resolved that, by 2030, we shall achieve inclusive and equitable quality education and lifelong learning for all. A year later, the Global Education Monitoring Report of 2016 makes the sobering claim that the world is 50 years behind in meeting its global education commitments. So what do we make of the Incheon ambition? Is it looking to reach goals in 2030 that ought to have been achieved by 1980? Are we playing catch-up or making real progress?

Timing notwithstanding, Uwezo assessments across Kenya, Tanzania and Uganda have highlighted the learning crisis since 2010. The key observation has been that budgets and other inputs to learning have been increasing steadily, but learning outcomes have remained essentially stagnant. In this sixth Uwezo report, we pose the question yet again, Are our children learning? This is in no way meant to demean, discredit or ignore what our governments are doing to improve learning and bridge inequality. Our aim is to argue, again, for a holistic approach to education that makes learning the barometer of success in the education sector and that helps to ensure that East African countries achieve the Sustainable Development Goals.

In November 2016, the Technical Cooperation Group (TCG) for SDG 4 approved a set of 43 thematic indicators that should be monitored into 2030. The indicator that took pole-position (4.1.1) is that reading and numeracy shall be measured at the following three milestones: the end of lower primary; the end of primary education cycle, and [the end of] lower secondary. This report uses the Uwezo assessment data collected in October 2015, to present evidence on the outcomes of reading and numeracy at lower primary (based on Grade 2). It reports on the basic competence of children at Grade 3 (end of lower primary) and the extent to which they have achieved the basics at Grade 2 level.

The Uwezo assessment is household-based. This is inclusive in that data presented in the report incorporate all children, including those not attending school. In addition, Uwezo makes the link between learning outcomes and other upstream indicators, especially those touching on pre-school attendance and teacher presence.

The evidence is rich, but unpleasant. Learning outcomes are low and extremely inequitably distributed across geographic areas, socio-economic strata and types of schools. A significant proportion of children in Grade 3 cannot read a single word or correctly identify numbers.

We hope that the evidence and insights contained in this report will focus public debate on the learning crisis, and guide policy decisions towards deliberate efforts to address it.

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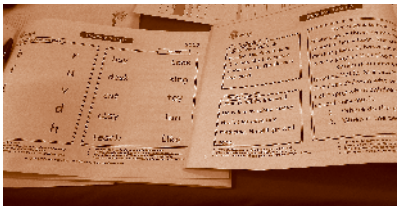
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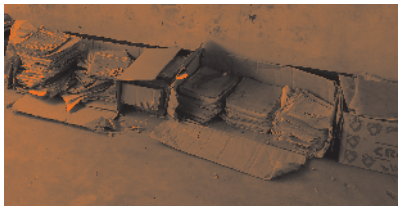
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ACKNOWLEDGEMENTS



The completion of this report has seen the dedicated contribution of a wide range of staff, volunteers, consultants and partners. We wish to acknowledge everybody who offered his or her time and resources to support the successful implementation of the 2015 Uwezo assessment in Kenya. Our apologies in advance for not being able to mention everyone by name. The following, however, stand out in their unique contributions to the 2015 assessment:

- The National Advisory Committee members: Professor Fatuma Chege, Dr. Asumpta Matei, Darius Mogaka, Ms. Dinah Mwaita, Dr. David Njengere, Dr. Sara Ruto and Professor Gituro Wainaina
- The Uwezo Kenya Secretariat: Emmanuel Manyasa, Winny Cherotich, Lydia Nakhone, Boaz Ochi, Francis Njuguna and Izel Kipruto
- The Uwezo Regional Office: Dr. John Mugo, Dr. James Ciera, Amos Kaburu, Walter Kwena and Rosemary Njeri
- Twaweza Kenya team: Nancy Mbugua, Rosaline Muraya, Brezhnev Otieno, Sam Otieno, Victor Rateng, Eveline Siaga and Ezekiel Sikutwa
- The Uwezo Kenya 2015 test panelists: Zachariah Kabiru, Charles Kado, John Kariuki, Shadrack Kasinga, Beatrice Kiminza, Timothy Kyengo, Grace Mwathe, Mohamed Mwachia, Mary Ndiang'ui, Millicent Nyaguthii, and Salome Wenyaa
- The Uwezo+ panelists: Erastus Karani, Paul Mungai, Jonathan Abuga, Musa Otieno and Lucy Gathigi
- The Uwezo Regional Coordinators who relentlessly supported the secretariat in coordinating assessment activities in each of the 20 regions
- The 153 Uwezo District Partners and District Coordinators who offered their time to work with village coordinators and volunteers to ensure that we visited all the



schools, villages and households

- The 58 trainers who offered their time and skills to enhance the volunteers' capacities to conduct the survey in the most credible way possible
- The over 9,100 volunteers and village coordinators who walked from house to house assessing a total of 130,653 children. You are the true Uwezo heroes in Kenya
- The over 4,500 head teachers who allowed us to visit and conduct the survey in primary schools under their management, as well as the County and Sub-county education directors and officers
- The 4,529 Chiefs, Assistant Chiefs and village elders who patiently walked with us around the villages and introduced us to households to make the assessment possible
- The 69,183 heads of households who opened their doors to us, answered many questions and allowed us to assess their children. We cannot thank you enough

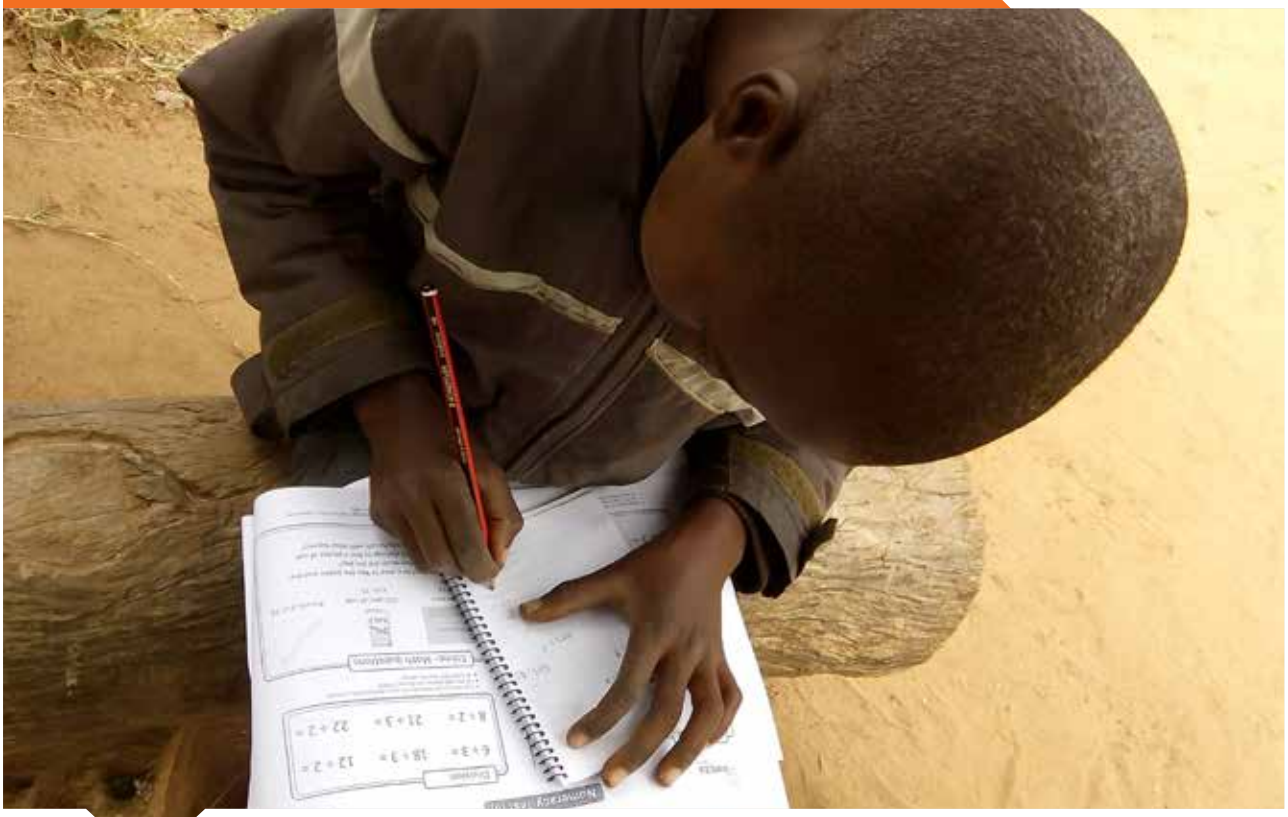


We wish to thank the leadership of the Ministry of Education, Science and Technology both at the national and county levels for their continued support of Uwezo Kenya activities. We recognize the support we have received from the Kenya National Examinations Council and the Kenya Institute of Curriculum Development (in developing and reviewing the tests), as well as the support in sampling and access to Enumeration Area maps from the Kenya National Bureau of Statistics. We wish also to thank the Kenya Primary Schools Heads' Association, the Teachers' Service Commission and the Kenya National Union of Teachers for their role in producing and sharing this evidence.

Dr Teresa Mwoma drafted this report, with support from Dr James Ciera and Conrad Watola. Editorial and design services were coordinated by Risha Chande. Our Executive Director, Aidan Eyakuze, provided support and guidance throughout.

It takes a massive, dedicated team to pull off the Uwezo survey. To all those whose names we couldn't list here, accept our heartfelt gratitude and know that literally, we could not have done it without you. We continue to be inspired by all who unwaveringly work every day to secure the future of our children through education.

ASANTENI.



WHY DON'T OUR CHILDREN'S LEARNING OUTCOMES IMPROVE?

Emmanuel Manyasa and John Mugo

This is Uwezo's sixth learning assessment report for Kenya. It confirms that the question we asked when we began in 2009 is still relevant: Are Our Children Learning? Results have remained static over the years, and this sixth round is no different. There is still no significant improvement in learning outcomes: only 3 out of 10 children in Class 3 can do Class 2 work. On average, 1 out of 10 children in Kenyan primary schools are completing Class 8 without having acquired the basic competencies expected of a child completing Class 2.

It's not all bad news though. Looking at school indicators, teachers' daily attendance appears to have worsened, even as more children are enrolling in pre-school. We note that this assessment was conducted shortly after a nation-wide teachers' industrial action that ended in not achieving what teachers had set out to achieve. Their morale may have been at the lowest and thus the decline in attendance, which had been improving over the years. Equally, the gender parity in enrollment and learning outcomes seems to have been achieved across the country. The exceptions are Arid and Semi-Arid Lands districts where more boys are enrolled than girls. However, geographic, socio-economic and locational inequalities persist, in favor of urban and non-arid areas as well as non-poor households.

The assessment was conducted fully in 157 of 158 districts in Kenya, covering a random sample of 4,649 Enumeration Areas and 69,183 households. A total





157 of 158
districts assessed



69,183
households reached



130,653
children assessed



4,529
schools visited

of 130,653 children were assessed. In addition, surveys were conducted in 4,529 schools, capturing basic data about the primary schools in which most of the children in the sampled Enumeration Areas were enrolled. A total of 9,100 persons were identified, trained and engaged as Uwezo volunteers, who conducted the survey under supervision and oversight from 459 Village Coordinators, 153 District Coordinators, 58 trainers and 20 Regional Coordinators. Data were entered in the Uwezo Data Centre in Nairobi, and cleaned and analyzed with support from various data experts.

This report is produced in 2016, the first year of the Sustainable Development Goals framework, and it is based on data collected in 2015, when Kenya was meant to have achieved the Education for All (EFA) targets that were set in Dakar, Senegal in the year 2000. Of greatest relevance to Uwezo was Goal Six, which aimed at 'Improving all aspects of quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.' The 2015 Uwezo assessment measured the ability of children to read and comprehend English and Kiswahili, as well as complete basic numeracy tasks, at the Class 2 level. This report thus provides rich insight into the successes and failures in pursuit of the EFA goals and provides a baseline against which we can monitor progress in SDG 4.

With findings that point to non-achievement of the EFA goals, the onus is on all of us to steer the next round of discussions on improving education away from visible, often quantitative inputs, to the less visible qualitative outcomes. When considering our education system we tend to assess, and in many cases prioritize, the more visible and apparent indicators around school facilities and infrastructure, the data on enrolment and attendance. But the truth is that while these speak to the learning environment and present important findings about our education system, many of them do not relate directly to learning outcomes. Until we focus our attention on whether children are learning and use that to set and implement policy, teach, and apply what we know works in improving learning, we will continue to see the same disappointing data year on year.

To this end, we welcome three national interventions, announced in early 2015, that directly address the levels of basic literacy and numeracy. The Tusome program is a collaboration between the Research Triangle International and the Ministry of Education (MOE).



This program seeks to improve reading among children in Classes 1 and 2, and features a new approach to teaching reading, increased teacher support and supervision, as well as improved learning environments. A related program by the same implementers, Tayari, aims to improve children's readiness to learn, working with pre-school children to enhance pre-literacy skills. A third national program, PRIEDE, brings together the Global Partnership for Education and MOE, with the aim of enhancing numeracy skills among children in Classes 1 and 2. These three programs are important steps in the movement towards proper prioritization of and investment in learning outcomes in Kenya's education sector.

To complement the effort of MOE and development partners, it is imperative that the role of parents, teachers and local communities in improving learning remain significant. The release of this report therefore renews our call to all citizens to play a role in improving learning. If each of us did one small thing where we are, all children in Kenya could attend school and learn.



Key Facts on Learning in Kenya 2015

FACT 1

Learning levels are low



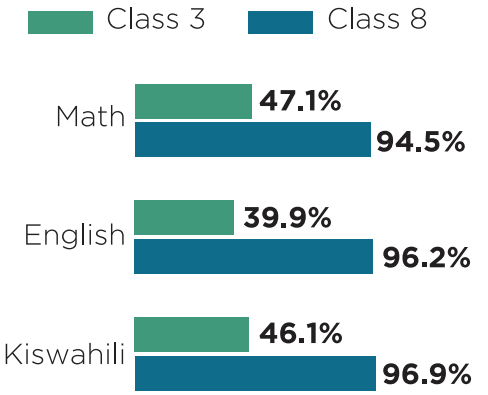
Nationally, **only 3 out of 10** Class 3 pupils can do Class 2 work.





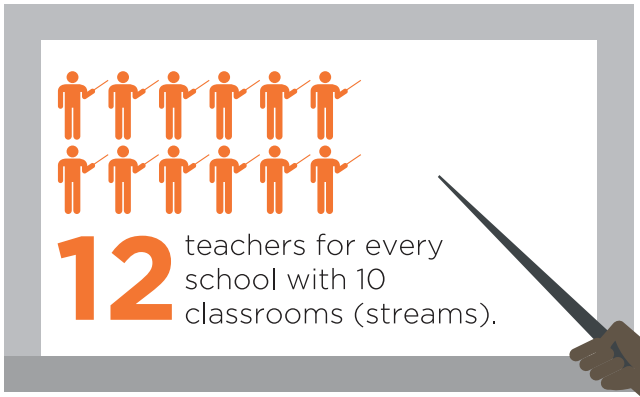
Generally, **8 out of 100** pupils in Class 8 cannot do Class 2 work across the country.

Pupils who can do Class 2 work

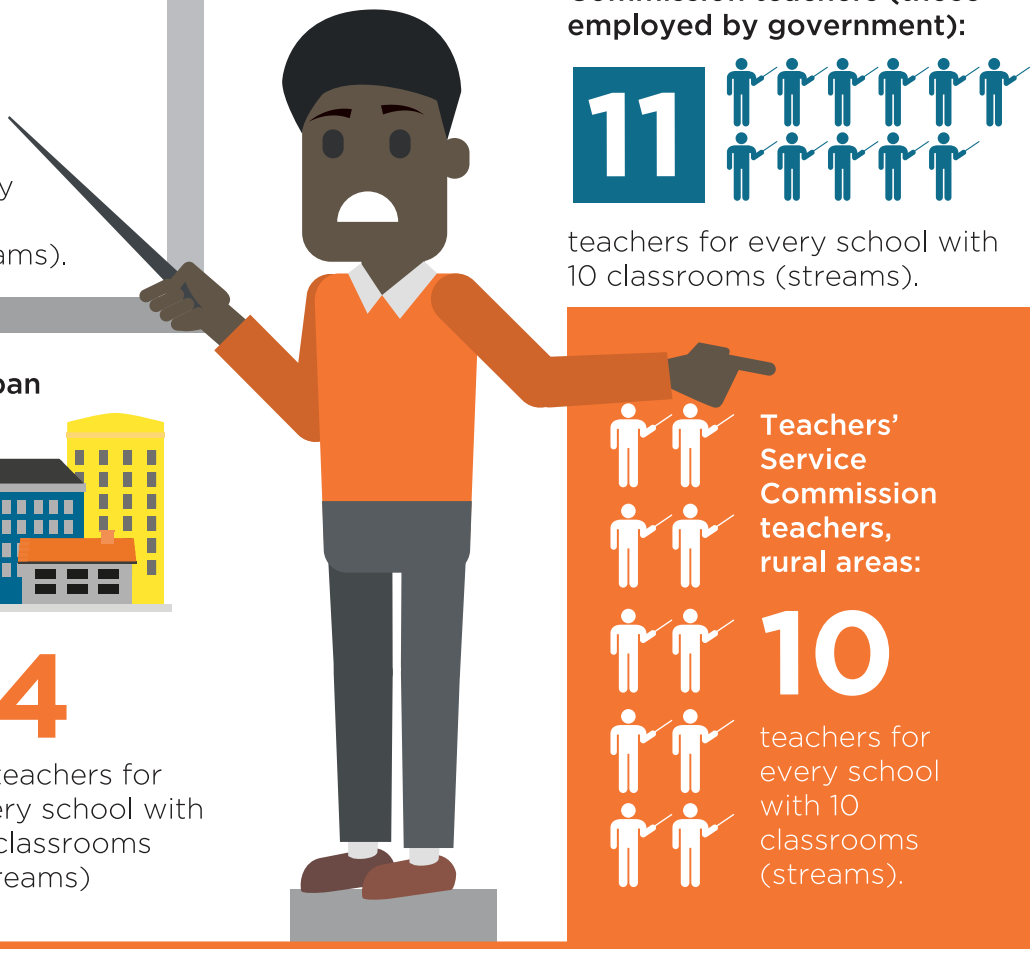


FACT 2

The teacher/classroom (stream) ratio is low and disparate



12 teachers for every school with 10 classrooms (streams).

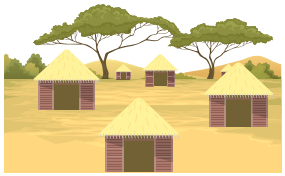


Teachers' Service Commission teachers (those employed by government):

11

teachers for every school with 10 classrooms (streams).

Rural



12

teachers for every school with 10 classrooms (streams)

Urban

14

14 teachers for every school with 10 classrooms (streams)

Teachers' Service Commission teachers, rural areas:

10

teachers for every school with 10 classrooms (streams).

FACT 3

There is a close connection between the distribution of teachers and learning outcomes



Having more teachers per classroom (stream) is linked to better learning outcomes

The relationship is statistically significant

FACT 4

Learning outcomes are lower in: rural areas, arid areas and poorer households

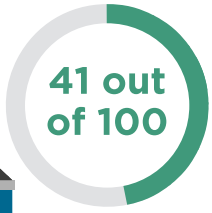
Class 3 pupils who can do Class 2 work

Rural



Learning outcomes are better in urban areas, non-arid areas and non-poor households.

Urban



FACT 5

Policies on running of pre-schools are not followed



4 in 10
pre-school teachers are trained.

Children aged 2-3 prematurely enrolled in pre-school (underage):

13%



Children should be enrolled in pre-school at age 4



Children aged over 6 enrolled in pre-school (overage):

21%



No clear policy on hiring of pre-school teachers:



hired by county governments



KEY FINDINGS



Preschool Attendance

FIG 1: CHILDREN'S ATTENDANCE AT PRESCHOOL BY AGE (%)

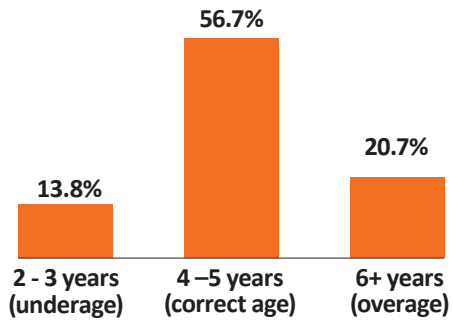
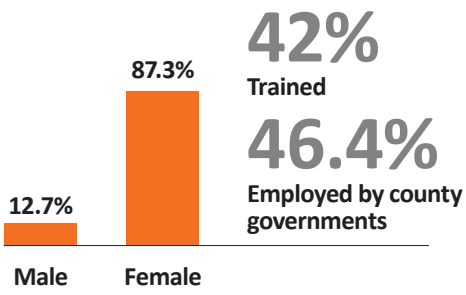


FIG 2: PRESCHOOL TEACHERS BY GENDER, TRAINING STATUS AND EMPLOYMENT STATUS

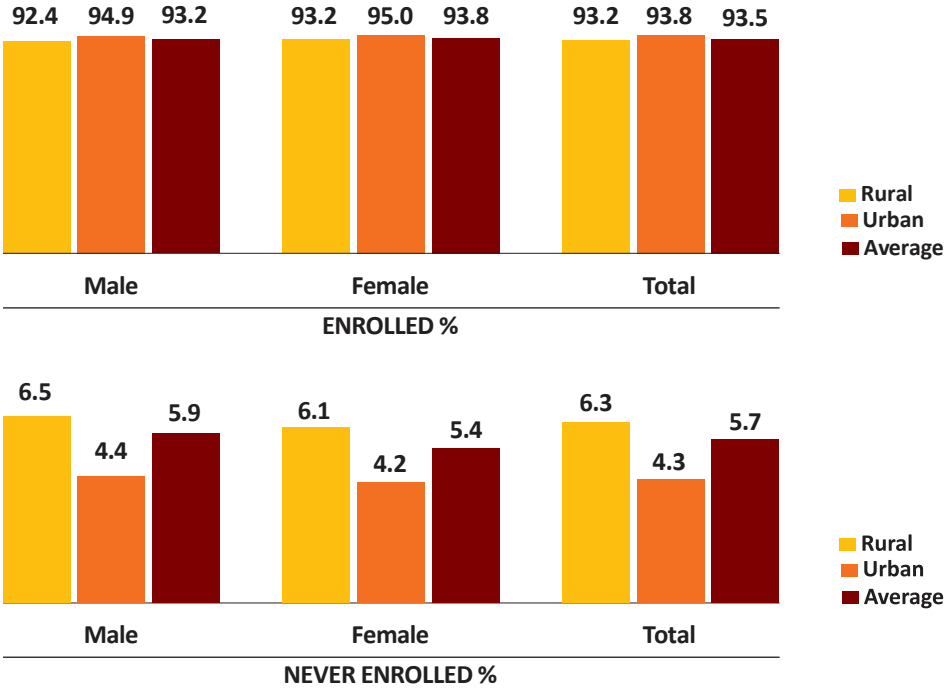


- One out of 10 children aged 2 - 3 years are attending preschool contrary to policy
- 6 out of 10 children aged 4 – 5 years are attending preschool.
- 2 in 10 children aged 6 years and above are attending preschool, when they should have enrolled in primary school.

- 13 out of 100 of preschool teachers in the surveyed schools were male.
- 42 out of 100 preschool teachers in the surveyed schools are trained.
- On average, 46 in 100 teachers are employed by county governments, the rest are either employed by parents or volunteering.

Access to primary education

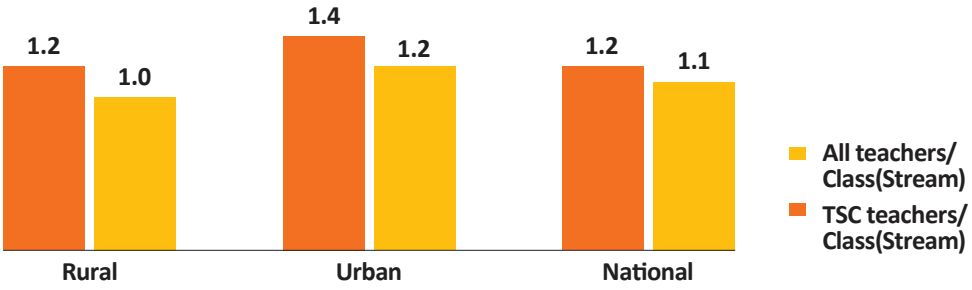
FIG 3: ACCESS TO PRIMARY EDUCATION BY GENDER (6-16 YEARS) %



- On average, 6 out of 100 children aged 6 – 16 years have never enrolled in school. This has improved from 2014 when 9 in 100 children of the same age had never enrolled in school. The rate varies slightly with gender and location.
- 6 out of 100 children aged 6-16 years in rural areas and 4 out of 100 children of the same age in urban areas have never enrolled in school.
- Only 4 out of 100 boys and girls in urban areas aged 6-16 years never enrolled in primary school compared to 7 boys out of 100 and 6 out of 100 girls of the same age in rural areas.

Teachers

FIG 4: TEACHER CLASSROOM (STREAM) RATIO BY LOCATION AND TEACHER TENURE STATUS

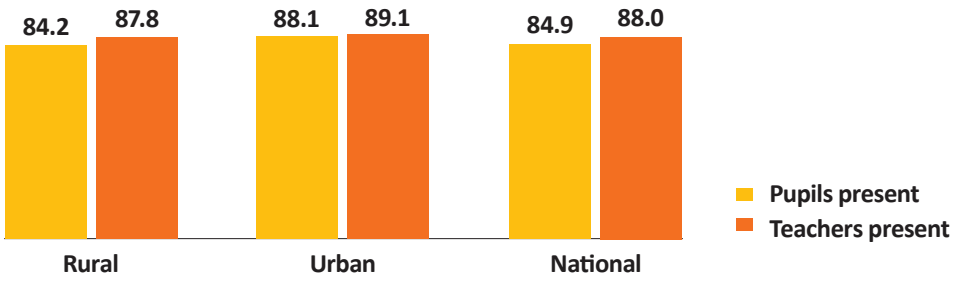


- The teacher/classroom (stream) ratio is low. On average, there were 12 teachers for every school with 10 streams. This varies between rural and urban areas as well as between counties.
- There were 12 teachers for every school with 10 classrooms (streams) in rural areas compared to 14 teachers for every school with 10 classrooms (streams)

in urban areas.

- This ratio declines when only Teachers' Services Commission (TSC) teachers are accounted for to 11 TSC teachers for every school with 10 classrooms (streams).
- In rural areas, there were 10 TSC teachers for every school with 10 classrooms (streams).
- Counties with the best teacher to classroom (stream) ratio (12 teachers for 10 classrooms/streams): Kirinyaga, Kiambu, Embu, Nakuru, Nairobi, Kisii and Baringo with TSC teacher/ classroom (stream)
- Counties with the worst teacher to classroom (stream) ratio (6 teachers for 10 classrooms/streams): Mandera and Garissa with only 6 teachers per school of 10 classrooms (streams).

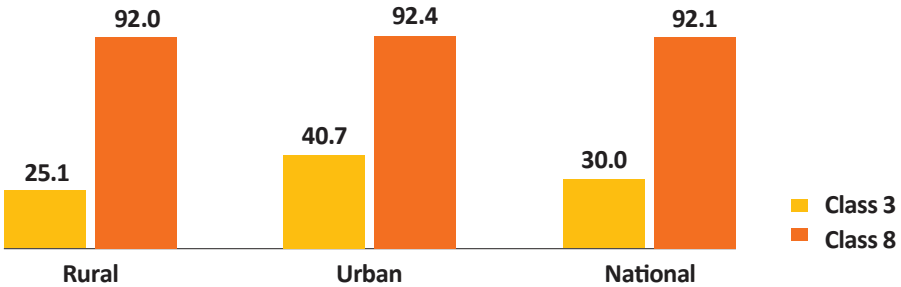
FIG 5: PERCENTAGE OF TEACHERS AND PUPILS SCHOOL ATTENDANCE ON THE DAY OF SURVEY



- On average, 12 out of 100 teachers were absent from school on the day of the visit. This is higher than was reported in 2014 where there were 9 out of 100 teachers absent on the day of visit. This reflects a decline in attendance compared to the previous years and could be attributed to the fact that assessment happened shortly after a nationwide teachers' strike that ended in a stalemate.
- In urban areas, the rate of absenteeism was slightly lower with 11 out 100 teachers being absent on the day of the visit.
- On the day of the visit, 15 out of 100 pupils were absent from school. More children from rural areas (16 in 100) were absent from school compared to those from urban areas (12 in 100).
- Absenteeism rate was similar between boys and girls.

Learning outcomes

FIG 6: PERCENTAGE OF CLASS 3 AND 8 PUPILS WHO CAN DO CLASS 2 WORK BY LOCATION

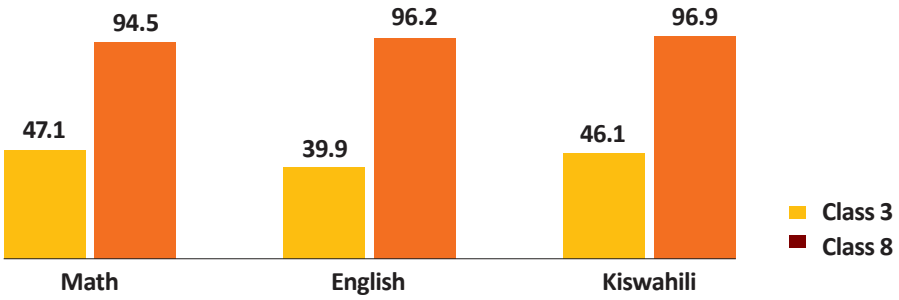


- On average, only 30 out of 100 Class 3 pupils can do Class 2 work.
- This rate varies between rural and urban areas. In rural areas only 25 out of 100 Class 3 pupils can do Class 2 work compared to 41 out of 100 Class 3

pupils who can do Class 2 work in urban areas.

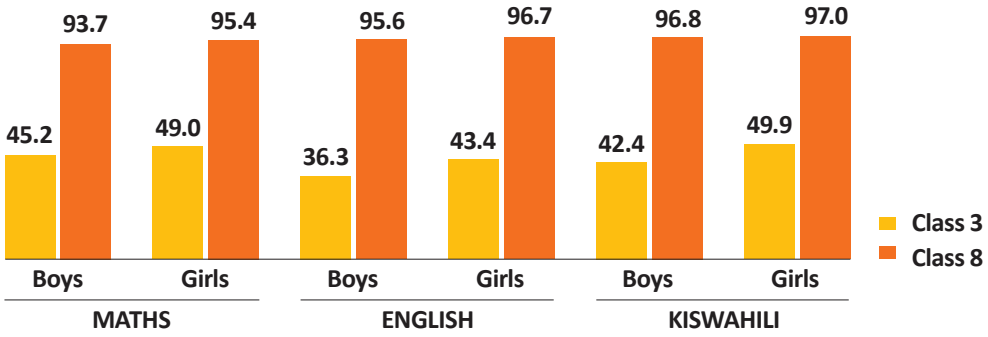
- Nationally, 8 out of 100 pupils in Class 8 cannot do Class 2 work across the country.
- These rates also vary between numeracy and literacy, and counties, socio-economic backgrounds and gender.

FIG 7: PERCENTAGE OF CLASS 3 AND 8 PUPILS WHO CAN DO CLASS 2 WORK BY SUBJECT



- Looking at individual subjects, on average, at least 4 out of 10 pupils in Class 3 can do Class 2 work, but only 3 out of 10 can do all the three subjects.
- On average, at least 95 out of 100 pupils in Class 8 can do Class 2 English, Math or Kiswahili, but only 92 out of 100 can do all the three subjects combined.

FIG 8: PERCENTAGE OF CLASS 3 AND 8 PUPILS WHO CAN DO CLASS 2 WORK BY GENDER



- Generally, girls returned better learning outcomes than boys at both Class 3 and Class 8 in all the assessed subjects.
- The gap (in coverage of class 2 competences) between boys' and girls' performance is widest in the earlier classes of primary school but then narrows by the time pupils reach Class 8.

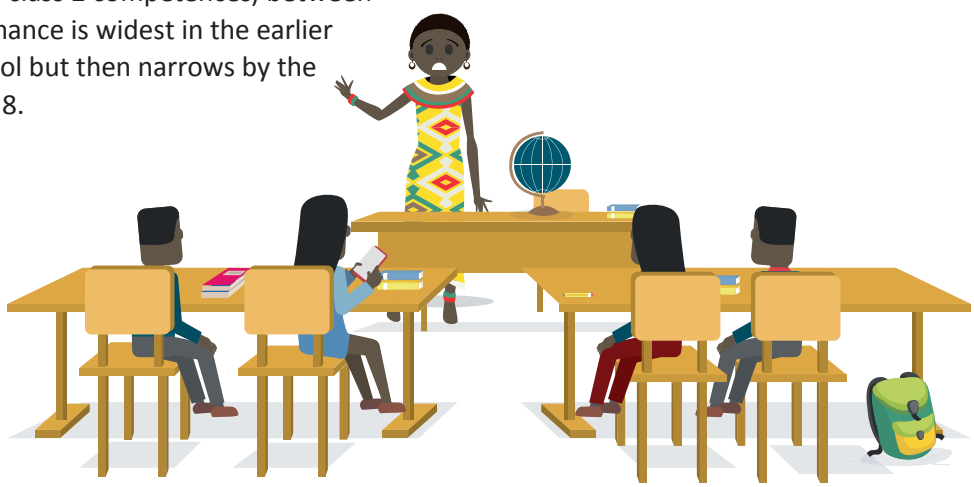
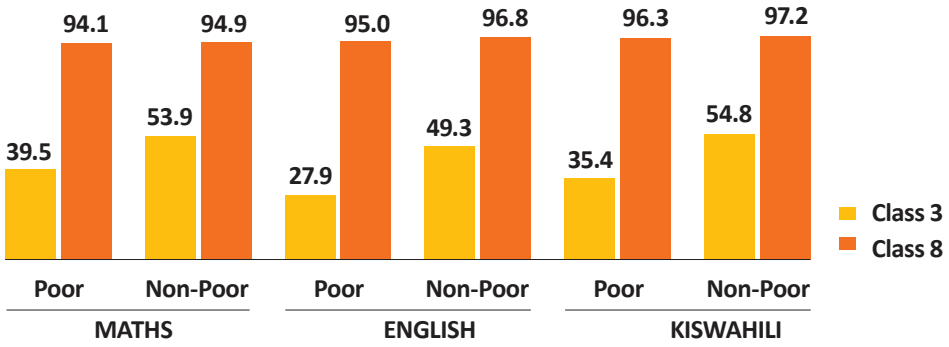
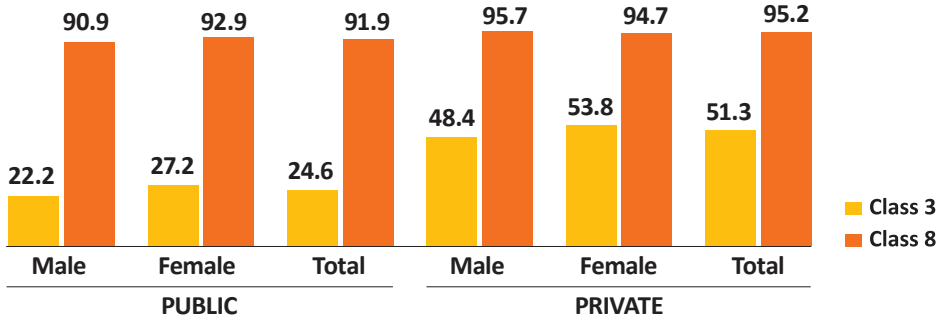


FIG 9: PERCENTAGE OF CLASS 3 AND 8 PUPILS WHO CAN DO CLASS 2 WORK BY SOCIO ECONOMIC BACKGROUND



- Generally, children from non-poor[1] households outperformed their counterparts from poor households.
- In Class 3, there are wide gaps in learning outcomes between children from poor and non-poor households in all subjects. The largest gap is in English literacy where a child from a non-poor household is almost twice more likely to do Class 2 work compared with a child in a poor household.
- However, in Class 8, the gap in learning outcomes between children from the two sets of households narrows in all the assessed subjects. The gap in English literacy continues to be the largest with two percentage points' difference between poor and non-poor households.

FIG 10: PUPILS' COMPETENCY LEVELS BY GENDER AND TYPE OF SCHOOL ATTENDED



- A Class 3 pupil in a private school is twice as likely to successfully do Class 2 work as a pupil in the same class in a public school.
- The gap narrows in Class 8, but still 8 out of 100 children in public schools cannot do Class 2 work compared to 5 out of 100 in private schools.
- Girls outperform boys in public schools across Classes 3 and 8. In private schools, the boys catch up to the girls by the time they reach Class 8.

[1] Households were classified as poor or non-poor based on household possessions. A composite household wealth index was generated using household items like table, TV, radio, car, etc. A household was scored highly if it possessed valuable items like car and TV. To identify a poor or non-poor household, we used the median as the yard stick. Households that scored above the median were considered non-poor while those that scored below the median were tagged poor.

Significance tests

The fitted regression model, whose results are given in table 11 is between learning levels among Class 3 pupils at County level against sex of the pupil; type of school attended (public/private); household socio-economic status (poor/non-poor); and mother's level of formal education. The results show:

- The odds of having better learning outcomes for girls are 16% higher than for boys;
- Pupils in private schools have better learning outcomes than those in public schools. The odds for a pupil from a private school to have better learning outcomes are twice those of a pupil from a public school;
- The odds for children from non-poor households to have better learning outcomes are 30% higher than those of children from poor households; and
- Mother's education plays a significant role in improving the learning outcomes of a child. Using children born to mothers with no education as the reference group, the odds of having better learning outcomes are 10%, 72% and 250% higher for pupils born to mothers with primary, secondary and tertiary education respectively.

TABLE 1: REGRESSION RESULTS

NUMBER OF OBS: 73,197
LR CHI2(57): 37,886.3
PROB > CHI2: 0.000
PSEUDO R2: 0.3735
LOG LIKELIHOOD: -31779.9

FACTOR (VARIABLE)	LEVEL	ODDS RATIO	P-VALUE	[95% CONF. INTERVAL]	
Gender (Ref: boys)	Girls	1.16	0.000	1.11	1.20
School type (Ref: Public)	Private	2.16	0.000	2.03	2.29
HH Socio economic status (Ref: Poor)	Non-Poor	1.30	0.000	1.24	1.36
Mother Education (Ref: No educ)	Primary	1.10	0.003	1.03	1.17
	Secondary	1.72	0.000	1.59	1.85
	Tertiary	2.48	0.000	2.12	2.89

- In a separate regression model the relationship between learning levels among Class 3 pupils at county level region of residence (urban/rural) as well as teachers/classroom (stream) ratio was estimated.
- The two variables are significantly correlated to the learning levels. The higher the teachers/classroom ratio the higher the learning level achieved. Children who attended urban schools registered significantly higher learning levels than those who attended rural schools.
- The fitted regression model between learning levels among Class 8 pupils at County level against region of residence (urban/rural) and teachers/classroom (stream) ratio returned insignificant coefficients for all the variables



LEARNING OUTCOMES BY COUNTY

COUNTY RANK[2]	COUNTY NAME	OUTCOMES (PERCENTAGES)			
		Class 3 who can do Class 2 work	Class 3 who can do Class 2 work (Rural)	Class 3 who can do Class 2 work (Urban)	Children 6-16yrs who can do everyday math
1	Nyeri	51.8	47.2	68.2	75.3
2	Nairobi	50.5	-	50.5	64.1
3	Mombasa	49.9	-	49.9	62.1
4	Nyandarua	46.3	43.9	55.4	67.4
5	Kajiado	42.3	28.4	68.8	57.6
6	Homa Bay	39.6	38.8	43.5	66.6
7	Kiambu	39.5	43.2	37.2	68.4
8	Laikipia	39.2	35.1	51.6	58.8
9	Nandi	37.8	37.0	42.9	59.1
10	Kirinyaga	36.1	34.1	45.6	71.8
11	Uasin Gishu	35.3	31.1	41.4	58.7
12	Taita Taveta	35.1	36.6	28.2	58.8
13	Meru	35.0	33.7	52.8	62.9
14	Murang'a	33.1	33.4	31.7	67.3
15	Tharaka Nithi	32.7	32.2	34.6	60.9
16	Nyamira	31.8	13.0	33.7	61.3
17	Elgeyo-Marakwet	31.0	23.2	32.3	59.3
18	Nakuru	30.9	20.5	44.0	62.7
19	Kisumu	30.2	23.3	36.9	62.3
20	Embu	29.5	29.5	29.6	66.2
21	Kericho	29.0	29.2	28.7	60.3
22	Migori	28.7	21.9	43.8	56.7
23	Machakos	28.5	22.2	35.1	69.1
24	Kisii	27.7	27.4	29.2	64.2



COUNTY RANK[2]	COUNTY NAME	OUTCOMES (PERCENTAGES)			
		Class 3 who can do Class 2 work	Class 3 who can do Class 2 work (Rural)	Class 3 who can do Class 2 work (Urban)	Children 6-16yrs who can do everyday math
25	Trans Nzoia	26.8	24.2	36.3	60.8
26	Kitui	26.1	24.1	38.7	65.3
27	Busia	25.9	23.5	44.2	57.2
28	Kilifi	25.9	22.4	33.6	54.8
29	Marsabit	24.5	15.5	27.4	42.8
30	Makueni	24.1	24.5	21.7	67.1
31	Siaya	23.9	21.4	37.0	50.5
32	Kakamega	22.0	19.2	41.1	59.2
33	Narok	21.4	21.1	30.0	56.5
34	Kwale	21.2	16.5	38.2	51.8
35	Vihiga	19.3	20.9	16.1	59.5
36	Bomet	19.1	17.4	27.5	65.1
37	Lamu	18.7	21.3	12.6	64.6
38	Tana River	18.2	4.5	20.6	42.9
39	Samburu	16.7	12.1	31.6	50.9
40	Baringo	16.6	15.5	26.1	59.4
41	Bungoma	15.4	13.0	24.0	56.3
42	West Pokot	15.4	13.5	42.8	55.4
43	Isiolo	15.3	7.9	24.2	61.8
44	Garissa	12.9	12.3	32.9	31.1
45	Turkana	11.4	13.6	-	40.1
46	Mandera	10.1	5.8	11.0	44.1
47	Wajir	9.9	11.1	5.6	49.0
	Kenya	**30.0**	**25.1**	**40.7**	**60.4**



LEARNING INPUTS BY COUNTY

	COUNTY	Teacher/ classroom (stream) ratio	Teacher/ classroom (stream) ratio (Rural)	Teacher/ classroom (stream) ratio (Urban)	Teacher Attendance (%)	Pupil Attendance rate (%)
1	Nyeri	1.2	1.2	1.1	86.5	92.2
2	Nairobi	1.2	-	1.2	78.3	96.0
3	Mombasa	1	-	1	87.1	94.0
4	Nyandarua	0.9	0.9	0.9	89.2	86.2
5	Kajiado	1.1	1.1	1.1	82.3	91.1
6	Homa Bay	1	0.7	1.1	85.2	84.5
7	Kiambu	1.2	1.1	1.3	92.8	92.9
8	Laikipia	1	1	1	92.5	89.5
9	Nandi	1	1	1.2	86.8	87.0
10	Kirinyaga	1.2	1.2	1.3	91.8	94.3
11	Uasin Gishu	1.2	1	1.3	70.4	89.8
12	Taita Taveta	1.1	1.1	1.1	81.2	92.2
13	Meru	1.1	1.1	1	90.1	91.1
14	Murang'a	1	1	0.7	92.0	92.0
15	Tharaka Nithi	1	1	1.1	88.2	89.2
16	Nyamira	1.1	1.1	1.2	85.7	87.4
17	Elgeyo-Marakwet	1.1	1	1.3	92.5	91.5
18	Nakuru	1.2	1.1	1.2	82.7	89.4
19	Kisumu	1.1	1	1.2	85.2	90.6
20	Embu	1.2	1.2	1.2	88.6	90.8
21	Kericho	1	1	0.9	88.8	89.3
22	Migori	1	0.9	1.1	84.5	82.8
23	Machakos	1.1	0.9	1.3	89.8	90.7
24	Kisii	1.2	1.1	1.3	86.5	84.5



	COUNTY	Teacher/ classroom (stream) ratio	Teacher/ classroom (stream) ratio (Rural)	Teacher/ classroom (stream) ratio (Urban)	Teacher Attendance (%)	Pupil Attendance rate (%)
25	Trans Nzoia	1.1	1.1	1.1	79.0	82.0
26	Kitui	0.9	0.9	1.3	89.7	85.2
27	Busia	1	1	1.2	88.0	84.5
28	Kilifi	1.1	1	1.2	81.7	86.6
29	Marsabit	0.8	0.8	0.8	89.3	89.7
30	Makueni	0.9	1	0.9	91.9	88.5
31	Siaya	1.1	1.1	1.6	85.1	86.6
32	Kakamega	1.1	1	1.4	88.6	87.7
33	Narok	0.8	0.8	1.2	87.3	81.1
34	Kwale	1.1	1	1.2	86.0	83.9
35	Vihiga	1.1	1.1	1.1	82.2	85.2
36	Bomet	1	1	1.1	82.9	83.6
37	Lamu	1.1	1.2	1	92.0	91.3
38	Tana River	0.9	0.9	0.9	88.2	86.5
39	Samburu	1.2	1.2	1.4	81.5	79.4
40	Baringo	1.2	1.1	1.4	86.1	87.7
41	Bungoma	1	1	1.3	90.6	82.1
42	West Pokot	0.8	0.7	1.4	88.4	84.5
43	Isiolo	1	0.9	1.1	89.0	86.4
44	Garissa	0.6	0.6	0.9	85.1	84.6
45	Turkana	0.7	0.7	-	87.0	78.1
46	Mandera	0.6	0.6	0.8	90.6	87.0
47	Wajir	0.8	0.8	0.6	86.3	91.9
	Kenya	**1.1**	**1.0**	**1.2**	**87.7**	**88.1**



Selecting districts, villages, households

The sample frame for the 2015 assessment was drawn from the 158 districts that form the Kenya sampling frame according to the Kenya National Bureau of Statistics (KNBS). However, data were collected in 157 districts. The survey was not carried out in Samburu North district due to security reasons. The analysis further excluded data from Fafi, Masaba, Garissa and Marsabit districts due to quality challenges.

Aspect	Uwezo 2014	Uwezo 2015
Sample	Reached 156 & reported 155 districts 4,441 EAs 67,885 households 4,377 schools	Reached 157 & reported 153 districts 4,529 EAs 69,183 households 4,529 schools
Reached and assessed children	169,274 children reached, 129,429 children assessed	190,470 children reached, 130,653 children assessed
Sampling Enumeration Areas (EA)	Random replacement of 10 EAs in each of the 2013 villages; 20 old EAs remained from the panel	30 new EAs were sampled in all the districts.
Mapping Enumeration Areas (EA)	All EAs in districts mapped using EA maps	All EAs in districts mapped using EA maps
Household listing and lists	Volunteer was given a list of sampled households only	Volunteer was given a list of sampled households only
Process Recheck	Process re-check conducted in 21 districts	Process re-check conducted in 4 districts

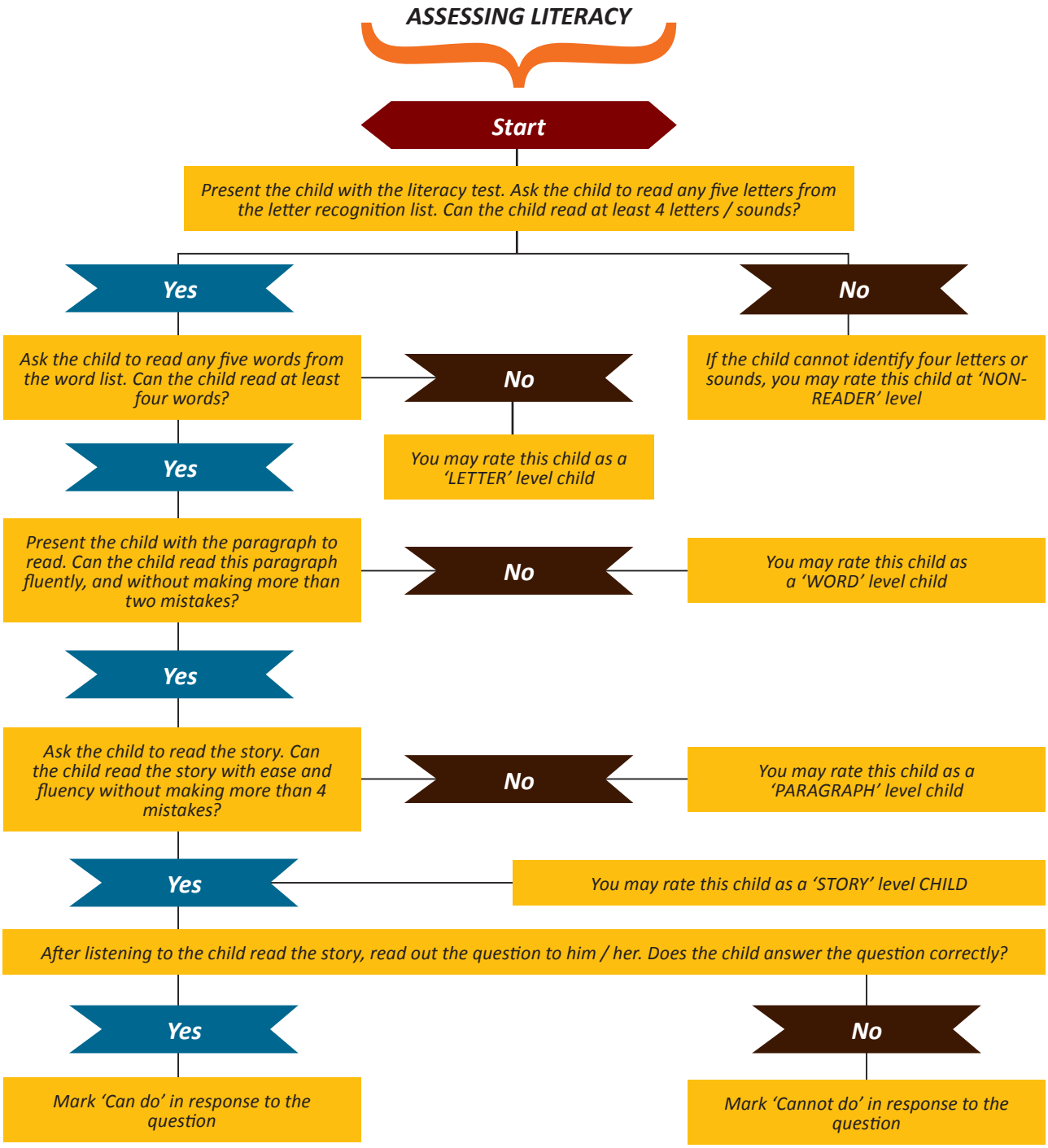
Testing tools and processes

The 2015 testing processes were largely similar to the 2014 processes. The tests were taken through more rigor on reliability with the adaptation of the Type Token Ratio analysis as adapted from ASER India. This was in addition to the Flesch Kincaid readability tests in English paragraphs and story. The test development framework was retained.

Aspect	2014	2015
Stakeholder buy in	Retention of the stakeholders with Ministry of Education, Kenya National Stakeholder buy in Examination Council, Kenya Institute of Curriculum Development and practicing teachers	Retention of the partnership with Ministry of Education, Kenya National Examination Council, Kenya Institute of Curriculum Development and practicing teachers
Constitution of Test panels	Panelists retained Inclusion of more teachers	Panelists retained
Adapting the testing framework	Adoption of the revised aspects of the framework Regional test standards adopted from the Zanzibar Community of Practice meeting	Testing framework maintained
Developing and selecting test samples	Six samples generated and four samples adopted	Six samples generated and four samples adopted
Pretests	Three pre-tests held (urban, semi-arid and agricultural districts) Three pretests held for Uwezo+	Three pre-tests held (urban, semi-arid and agricultural districts)
Reviewing tests	Tests reviewed after every pre-test	Tests reviewed after every pre-test
District wide pilot	District-wide pilot conducted	District-wide pilot conducted
Test validation	English readability test conducted Type Token Ratio conducted	English readability test conducted Type Token Ratio conducted

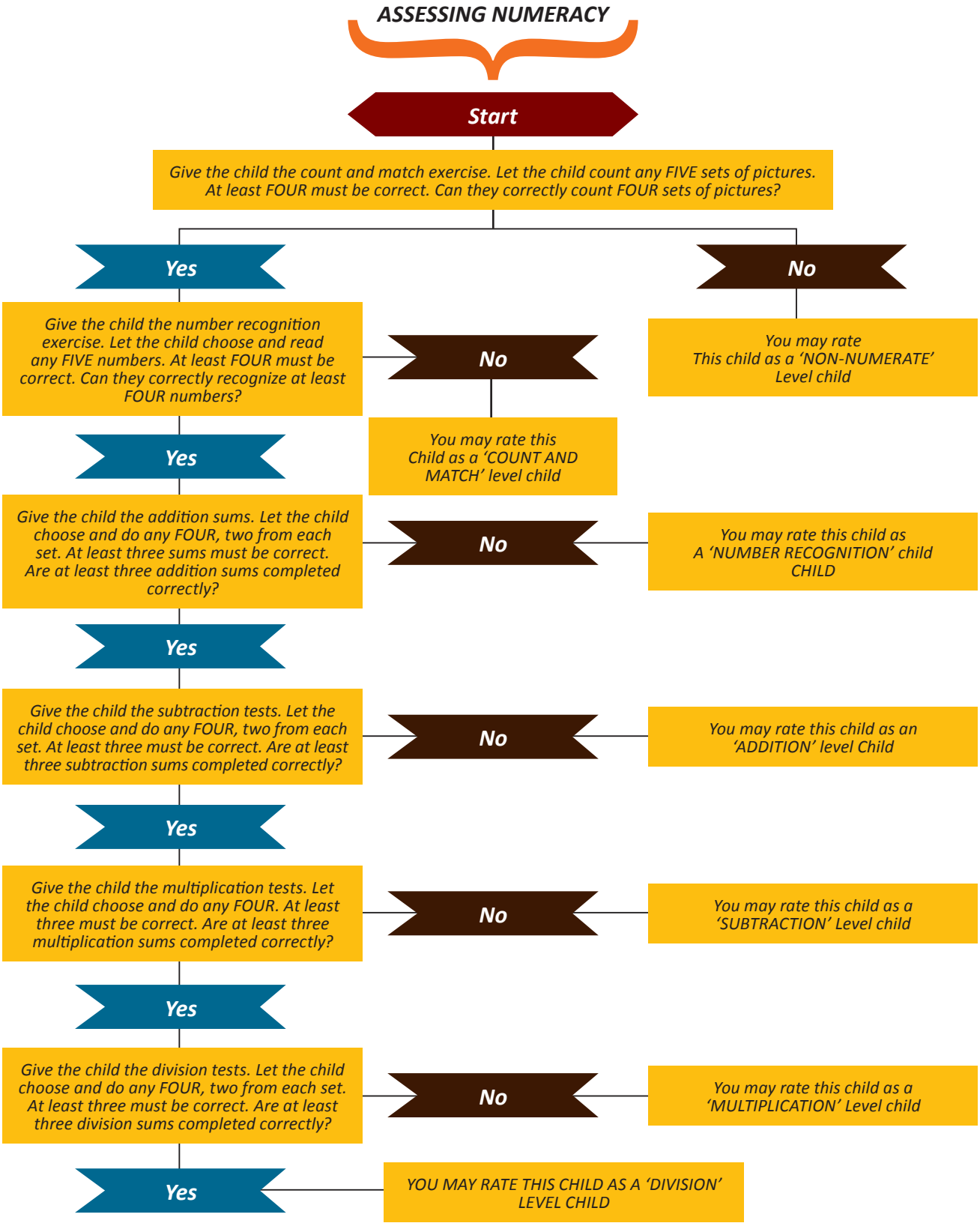
Assessing English and Kiswahili – reading and comprehension

English and Kiswahili reading were assessed at four different levels using Class 2 level tests. The levels were letters (silabi), words (maneno), paragraph (aya) and story (hadithi). Assessing began at letter/ syllable level then moved up to the story (hadithi). A child was graded at the highest level s/he reached. The assessment of the child commenced with the English test then moved to Kiswahili. There were four samples of tests used to allow for variation in households with more than one child qualified for assessing. Reading for fluency was assessed in the first three levels and reading for comprehension was assessed in the last level.



Assessing numeracy

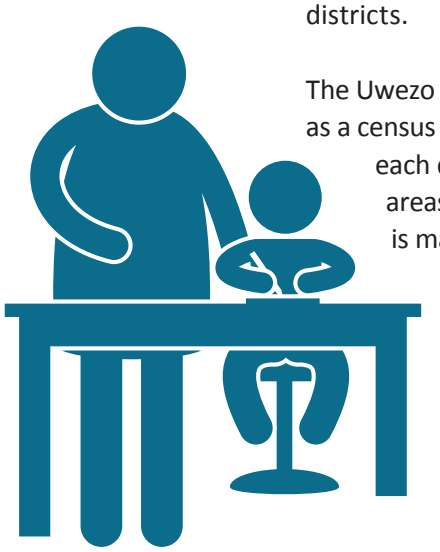
The numeracy test had six levels namely; count and match, number recognition (10-99), addition, subtraction, multiplication and division. Testing began at the count and match level and moved upwards to division. A child was graded at the highest level reached.



Sampling for 2015



The 2015 sampling for Uwezo Kenya utilized the 2009 Kenya population and housing Census frame. During this Census Kenya had 158 districts and by then 8 provinces. Now we have more than 277 districts and 47 counties. With the new Constitution, 47 counties are recognized as the highest administrative units in Kenya thus replacing the provinces. The 158 districts are distributed in the 47 counties. Two of the counties are composed of only one of the 2009 158 districts.



The Uwezo survey in Kenya is conducted as a census of all the 158 districts. From each district 30 enumeration areas (EAs) are sampled. An EA is made up of a village, part of a village, or several villages combined. The EAs were established based on the size (area wise), or the number of households which ranged from 50 to 100 in the rural areas and a maximum of 150 in urban areas during the Census mapping.

Sampling for 2015, rural and urban Kenya were considered separately. This is due to the fact that the rural characteristics are quite different from the urban ones. The 30 EAs sampled from each district were distributed proportionally between urban and rural areas based on number of households in the two settings.

Also in the urban areas, there are the planned areas and the unplanned areas. The unplanned areas are mainly referred to as the 'slums". The sampling catered for all these categories especially in major cities e.g. Nairobi, Mombasa, Kisumu, etc. The apportioning for the planned and unplanned areas was done as earlier mentioned.

Multi-stage, stratified, random and purposive sampling techniques were employed

The population exhibited a number

of distinct categories namely urban, rural, planned and unplanned areas, the frame was organized by these categories into separate "strata." Each stratum was then sampled as an independent sub-population, out of which individual elements were randomly selected. The district was the sampling frame. The district was thus stratified into rural and urban for those districts with urban component but those without, simple random sampling was done. For the districts with urban component, further stratification into planned and non-planned areas (slums) was done. This helped to avoid over-sampling one area with similar characteristics e.g. more slum areas could be sampled.

- The population was divided into distinct, independent strata so that inferences about specific subgroups that may be lost in a more generalized random sample (e.g. urban, or slum) could be drawn.
- Utilizing a stratified sampling method led to more efficient statistical estimates. Even where a stratified sampling approach did not lead to increased statistical efficiency, it did not result in less efficiency than would simple random sampling, since each stratum was proportional to the group's size in the population. This was strictly observed when identifying EAs that were sampled in both urban and slum areas.
- The fact that census data was more easily available for pre-existing strata within a population than for the overall population, using a stratified sampling approach proved more convenient than aggregating data across groups.
- Since each stratum was treated as an independent population, different sampling techniques were applied to different strata, thus enabling the use of the best suited and/or most cost-effective technique for each identified subgroup within the population.

Stratified sampling approach was considered, because the following three conditions were met

1. Variability within strata were minimized
2. Variability between strata were maximized
3. The variables upon which the population was stratified were strongly correlated with the desired dependent variable.

Within a stratum, homogeneity of households was assumed and thus households were sampled randomly. This was useful to avoid biasing the sample.

On the other hand, schools that were visited were sampled purposively based on whether they were the ones attended by majority of the children from the sampled EA. Both public and private schools were sampled on the basis of this criterion.

THE SELECTION FORMULAE

For EA

$$Pc = C \frac{HH_i}{\frac{N}{\sum_{i=1} HH_i}}$$

Pc = is the EA inclusion probability

C = is the number of EAs to selected in the district (30) if the district has urban and rural component the number was shared proportionately between the two segments and number for urban further share proportionately between planned and unplanned urban areas.

HH– Number of households within a cluster
For Households

$$Ph = \frac{h}{HH}$$

P*h*= Probability of selection a household in the EA/Cluster
HH= number of households in the EA/ Cluster.

The EA is the Primary Sampling Unit (PSU). The Household is the secondary sampling unit. The number of PSU per district were 30 and number Secondary Units (number of households) were 20 per PSU. Total PSUs covered in the country were 94,800 and the number of children aged 3-16 years covered was 184,613.

Weighting of the data
The weighting of the data was derived from the inverse of the probabilities. The data adjustment was done on Household, EA and district.

Stratified sample size
Using stratified sampling, the sample can often be split up into sub-samples. Typically, if there are k such sub-samples (from k different strata) then each of them will have a sample size ni, i = 1, 2, ..., k. These ni must conform to the rule that n1 + n2 + ... + nk = n (i.e. that the total sample size is given by the sum of the sub-sample sizes). Selecting these ni optimally can be done in various ways, using (for example) Neyman's optimal allocation.

There are many reasons to use stratified sampling: to decrease variances of sample estimates, to use partly non-random methods, or to study strata individually. A useful, partly non-random method would be to sample individuals where easily accessible, but, where not, sample clusters to save travel costs. In general, for H strata (representing the district of interest), a weighted sample mean is:

$$\bar{x}_w = \sum_{h=1}^{H} W_h \bar{x}_h,$$

with

$$\mathrm{Var}(\bar{x}_w) = \sum_{h=1}^{H} W_h^2 \mathrm{Var}(\bar{x}_h).$$

The weights, W(h), frequently, but not always, represent the proportions of the population elements in the strata, and W(h)=N(h)/N. For a fixed sample size, that is n=Sum {n(h)},

$$\mathrm{Var}(\bar{x}_w) = \Sigma W_h^2 \mathrm{Var}(h) \left(\frac{1}{n_h} - \frac{1}{N_h} \right)$$

which can be made a minimum if the sampling rate within each stratum is made proportional to the standard deviation within each stratum: $n_h/N_h = kS_h$

Where

N is the total number of Households in the households

Appendix I: Tests

ENGLISH TEST

Letters/Letter sounds

p	r
f	u
l	v
n	d
a	h

Words

buy	look
test	sing
cat	toy
clay	fun
teach	like

Paragraph 1

Mary has a very big garden. Her friend gave it to her. She has grown flowers on it. The flowers look good.

Paragraph 2

John is not feeling well. He will miss school today. His father gave him medicine. He will get well soon.

Story

Martin had seven white chicks. An eagle ate five of the chicks. Martin was very angry. He wanted to trap the eagle. He did not know how to trap it. His friend Tom suggested they could use a rat.

The boys went to look for a rat. They saw one entering a hole. They dug deep into the hole. A big snake came out of the hole. The boys ran away screaming loudly. They did not trap the eagle.

1. Why was Martin angry?
2. Why were the boys digging into the hole?

KISWAHILI TEST

Silabi

ba	lo
cho	ka
di	mu
fu	ne
ge	pi

Maneno

bega	sifu
ndugu	toka
lenga	kiti
supu	ota
pete	hama

Aya ya Kwanza

Keli na Kiama ni ndugu. Wao huishi na wazazi wao mjini. Baba yao ni Yakobo. Yeye ni daktari wa meno.

Aya ya pili

Barasa ni ami yake Tom. Yeye ni mzee mnene na mrefu. Barasa ana watoto watano. Watoto hawa wanasoma kule Kinangop.

Hadithi

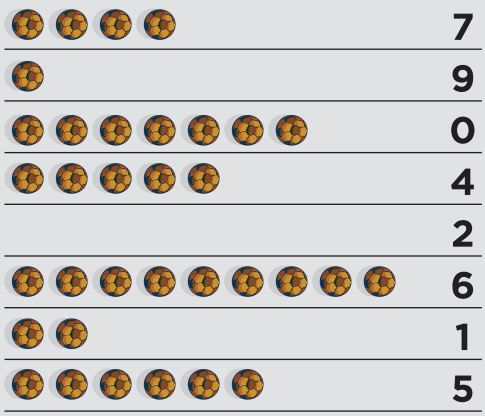
Wiki iliyopita tulikuwa na karamu kubwa nyumbani. Dada yangu alikuwa amefaulu mtihani wake. Mama na baba walijawa na furaha tele. Walialika jamaa na marafiki kwenye karamu. Wageni wote walifika mapema sana karamuni.

Mama alipika vyakula vitamu sana. Alipika chapati, wali na nyama. Kulikuwa na matunda ya aina nyingi. Dada yangu alikuwa na furaha tele. Alivaa nguo nzuri na kujitia marashi. Wageni wote walimpongeza na kumpa zawadi nyingi.

1. Kwa nini kulikuwa na karamu nyumbani?
2. Mama alifanya matayarisho gani ya karamu?

NUMERACY TEST

Count & Match



Number recognition 10-99

25	13	48	97
84	62	70	56

Addition

+ 54 / 21	+ 12 / 62	+ 20 / 50
+ 66 / 11	+ 40 / 47	+ 25 / 33

Subtraction

+ 54 / 21	+ 12 / 62	+ 20 / 50
+ 66 / 11	+ 40 / 47	+ 25 / 33

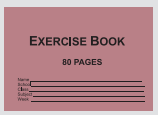
Division

4÷2=	6÷3=
20÷2=	18÷3=
24÷3=	10÷2=

Multiplication

4X5=	5X4=
3X3=	5X2=
2X4=	3X2=

Ethno- Math



Exercise book
Ksh. 23



500 gms of salt
Ksh. 10



Pencil
Ksh.15

1. Nafula was sent to a shop to buy one pencil and one exercise book. How much did she pay?
2. Ruto was given 50 shillings to buy one packet of salt. How much money was he left with after buying?

Appendix II: Our partners in 2015

NO.	DISTRICT	PARTNER ORGANIZATION
1	BARINGO CENTRAL	Maoi Community Integrated Development Program
2	BARINGO NORTH	Silver Springs Youth Group
3	BOMET	Kuhani Self Help group
4	BONDO	Child Rights Center – CRC
5	BORABU	Kijauri Village Youth Group
6	BUNGOMA EAST	Hequeendo Compassionate Friends CBO
7	BUNGOMA NORTH	Naitiri Network Group
8	BUNGOMA SOUTH	Forum For Art in Community Development
9	BUNGOMA WEST	Milimo Community Based Health Care
10	BUNYALA	Budalangi Theatre CBO
11	BURETI	Rays of hope Kenya
12	BUSIA	Busia Parish Family Life Education Programme
13	BUTERE	Empowerment Youth Group
14	CHALBI	Pastoralist Action for Development
15	EAST POKOT	Chemolingot Youth Intergrated Organization
16	ELDORET EAST	Women Empowerment and development inititive
17	ELDORET WEST	Uasin Gishu Youth Initiative CBO
18	EMBU	Embu Youth Aids Advocates
19	EMUHAYA	Emmakhwenje Community Learning Resource Centre
20	GARBA TULLA	Sayad (Save the Youth from Aids)
21	GATANGA	Geoeconomic empowerment program
22	GATUNDU	Victory Foundation
23	GITHUNGURI	Effective Living Network
24	GUCHA	Ogembo Township Poverty Eradication and HIV/ AIDS Youth group
25	GUCHA SOUTH	Volunteers Initiative Network Services Kenya(Vines Kenya)
26	HAMISI	Vision Empowerment Trust
27	HOMABAY	Star of the lake CBO
28	IGEMBE	Community approaches for sustainable development
29	IJARA	Woman Kind Kenya
30	IMENTI CENTRAL	Just As We Are (JAWA)
31	IMENTI NORTH	Meru Peace Initiative
32	IMENTI SOUTH	Meru Peace Initiative
33	ISIOLO	Pastrolists Women for Health and Education
34	KAJIADO CENTRAL	Dupoto E-maa
35	KAJIADO NORTH	Sifa Children Welfare Association
36	KAKAMEGA CENTRAL	Action For Child Development Trust
37	KAKAMEGA EAST	Youth Development Foundation
38	KAKAMEGA NORTH	Eunice Wavomba Foundation
39	KAKAMEGA SOUTH	Kakamega Youth and Community Initiatives (KYCI)
40	KALOLENI	Youth Alive CBO
41	KANGUNDO	Mbone Ngwone -Salvation Army
42	KEIYO	Logogo Youth Group

43	KERICHO	Samoei Community Development Programme
44	KIAMBU	Forum for Community Mobilisation (FOFCOM)
45	KIBWEZI	Kibwezi Disabled Persons Organization (KDPO)
46	KIKUYU	Youth for Change Action Group
47	KILIFI	KESHO
48	KILINDINI	Manyatta Youth Entertainment CBO
49	KINANGO	Kinango Human Rights Network
50	KIPKELION	Londiani Community Health Advocacy Group
51	KIRINYAGA	Sagana Disabled self Help group
52	KISII CENTRAL	Christian Emphasis Women Group
53	KISII SOUTH	Supporting Primary education across Kenya (Speak)
54	KISUMU EAST	Young Christian youth group
55	KISUMU WEST	Pamoja CBO
56	KITUI NORTH	Kitui Development Center
57	KOIBATEK	Vijana Tugutuke Initiative-Koibatek
58	KURIA EAST	Komotobo Mission
59	KURIA WEST	Kuria District Disability Network
60	KWALE	Tushauriane Youth For Development
61	KWANZA	Jamii Focus Initiative
62	KYUSO	Octap Youth Group
63	LAGDERA	Upendo Wetu Youth Initiative
64	LAIKIPIA EAST	Center for research and Advocacy in Human rights (CERA- Rights)
65	LAIKIPIA NORTH	Helping Orphans Meet Education
66	LAIKIPIA WEST	Youth For Leadership, Education and Development (YLED)
67	LAISAMIS	Nachamai Self Help group
68	LAMU	Faith Youth Group
69	LARI	Kijabe Environment Volunteers (KENVO)
70	LIMURU	Rays of Hope Initiative (ROHI)
71	LOITOKTOK	ILLARAMATAK le - MPUSEL (Amboseli Pastoralist Community Development Initiative)
72	LUGARI	Nucleus Children Trust
73	MAARA	Maara Welfare group
74	MACHAKOS	African Brotherhood Church
75	MAKUENI	Makueni Youth Network
76	MALINDI	Mission For Community Initiative and Development
77	MANDERA CENTRAL	Nomad to Nomad
78	MANDERA EAST	County Mentor Group (COMEG)
79	MANDERA WEST	Action for Sustainable Change (AFOSC-Kenya)
80	MANGA	Ritunda Youth Group
81	MARAKWET	Alminae of Marakwet University Students
82	MBEERE	Partners in Art and Contemporary Development (PCOD)
83	MBOONI	Great Stars Youth Group
84	MERU SOUTH	Chuka Youth Information Centre (CYIC)
85	MIGORI	Kimaiga Self Help Group
86	MOLO	Regional Youth Resource and Information Centre
87	MOMBASA	Coast Education Center

88	MOYALE	Strategies for Northern Development (SND)
89	MSAMBWENI	Msambweni Human Rights Watch
90	MT. ELGON	Mt. Elgon Resident Association(MERA)
91	MUMIAS	Khaunga Muslim Youth group
92	MURANG'A NORTH	Mukuyu Ukombozi Youth Alliance Network
93	MURANG'A SOUTH	Mitubiri Family Development Project
94	MUTOMO	Mutomo Sweden CBO
95	MWALA	Mwala Youth Team Initiatives (MYTI)
96	MWINGI	Tahidi Youth Development and Empowerment Organisation CBO
97	NAIROBI EAST	Vision Empowerment Trust
98	NAIROBI NORTH	Youth Initiatives Kenya (YIKE)
99	NAIROBI WEST	Vision Empowerment Trust
100	NAIVASHA	Women In Support of Vulnerable and Orphaned Program
101	NAKURU	Nature and people Network
102	NAKURU NORTH	Center for social development and governance
103	NANDI CENTRAL	Kapsabet Reds Youth Group
104	NANDI EAST	Youth on the move
105	NANDI NORTH	Community Youth Empowerment Organisation
106	NANDI SOUTH	Terik Essential Programmes and Development
107	NAROK NORTH	Narok Pillar of Development Organization
108	NAROK SOUTH	Enoonyuat Masantare Youth Association
109	NYAMIRA	Dawima Resources For Transformation S.H.G
110	NYANDARUA NORTH	Kenya Youth Education and Development Program (KYCEP)
111	NYANDARUA SOUTH	Engineer Broad Vision Group
112	NYANDO	Magunga Footsteps Child Support Group
113	NYERI NORTH	Modern Moguls Investment Youth Group
114	NYERI SOUTH	Inspire Children and Youth Organization
115	NZAUI	Hope for Abused and Neglected Children Programme
116	POKOT CENTRAL	Kaitapos Integrated Development Programme
117	POKOT NORTH	Krakow Culture and Development Organization
118	RACHUONYO	Softlab Youth Group
119	RARIEDA	Ruma Women Group
120	RONGO	Women Outreach Programme (WOP)
121	RUIRU	Ruiru Aids Awarenes Group (RAAG)
122	SAMBURU CENTRAL	Samburu Women
123	SAMBURU EAST	Kamanga Rehabilitation and Resource Centre
124	SAMIA	Arise and Shine Youth Group
125	SIAYA	YAWOSUP
126	SOTIK	Kapletundo Youth Community Organization
127	SUBA	Victoria Agricultural & Environmental Conservation Organization (VIAGENCO)
128	TAITA	Voi Youth Forum
129	TANA DELTA	Tana Youth for Development Initiative
130	TANA RIVER	Imarisha Rights Centre
131	TAVETA	Taveta Children Assistant
132	TESO NORTH	Friends of Environment Resource and Nature (FERN)

133	TESO SOUTH	Akukuranut Development Trust
134	THARAKA	Strategies for Agropastrolists Development
135	THIKA EAST	Gatuanyaga CBO
136	THIKA WEST	Hope Community Centre (HCC)
137	TIGANIA	Community initiatives for rural development
138	TINDERET	Youth on the move group 3
139	TRANS MARA	ACK Transmara Rural Development Program
140	TRANS NZOIA EAST	Cherenganyi Environment and development Forum (CEDEF)
141	TRANS NZOIA WEST	Save Africa
142	TURKANA CENTRAL	Turkana Livestock Development Organization (TLDO)
143	TURKANA NORTH	Family Support &Rescue organisation
144	TURKANA SOUTH	Alemun Pastoralists Empowerment Initiative
145	VIHIGA	Xposha Self Help Theatre Group
146	WAJIR EAST	Aldef Kenya
147	WAJIR NORTH	Jalalaqa Self Help group
148	WAJIR SOUTH	Wajir South Development Association
149	WAJIR WEST	Rural Education Focus
150	WARENG	Kerio center for community development and human rights
151	WEST POKOT	Yang'at Girl Child Potential Sensitization Group
152	WESTLANDS	Sifa Children Welfare Association
153	YATTA	Matuu Cheda CBO



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