

# GBD PROFILE: ETHIOPIA

## GLOBAL BURDEN OF DISEASES, INJURIES, AND RISK FACTORS STUDY 2010

The Global Burden of Disease Study 2010 (GBD 2010) is a collaborative project of nearly 500 researchers in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. It is the largest systematic scientific effort in history to quantify levels and trends of health loss due to diseases, injuries, and risk factors. GBD serves as a global public good to inform evidence-based policymaking and health systems design.

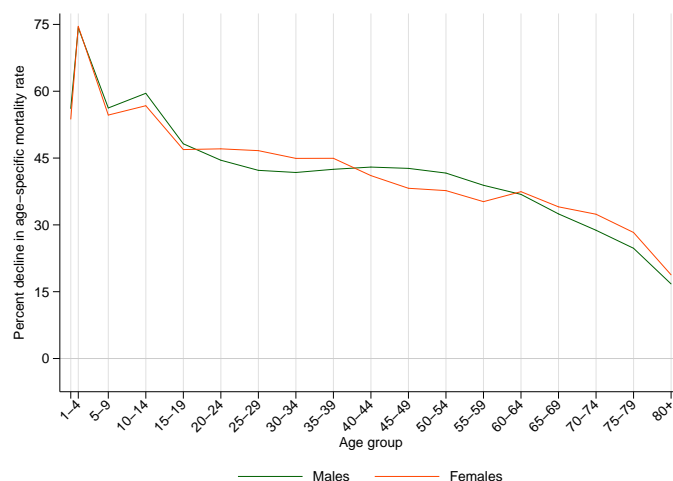
### PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Ethiopia, lower respiratory infections, diarrheal diseases, and malaria were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), measles showed the largest decrease, falling by 86% from 1990 to 2010.
- The leading risk factor in Ethiopia is childhood underweight.

### ALL-CAUSE MORTALITY RATE

- This chart shows the decline in mortality rate at every age range. The higher points on the chart indicate that declines in mortality rates were faster in those age groups between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by females aged 1-4 years (75%). Males aged 80+ years saw the smallest decrease in mortality rate (17%).

Percent decline in age-specific mortality rate by sex from 1990-2010 in Ethiopia



### CAUSES OF PREMATURE DEATH

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.

Ranks for top 25 causes of YLLs 1990-2010, Ethiopia

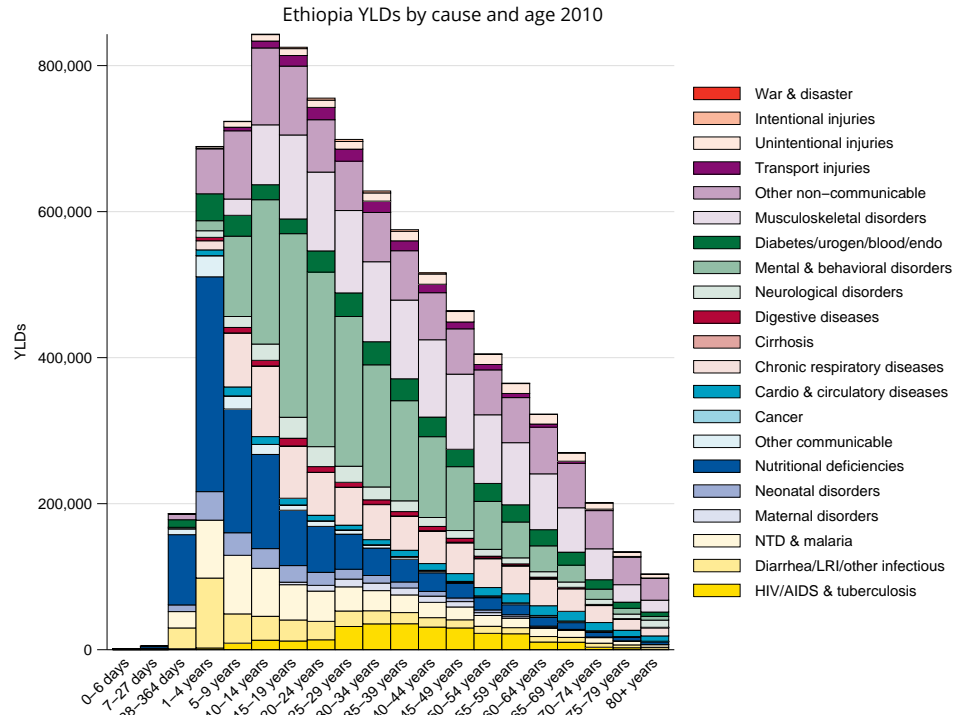
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
8,214 (14.7%)	1 Lower respiratory infections	1 Lower respiratory infections	4,518 (12.7%)	-45
7,152 (12.5%)	2 Measles	2 Diarrheal diseases	2,608 (7.3%)	-52
5,467 (9.8%)	3 Diarrheal diseases	3 Malaria	2,521 (7.1%)	-14
3,066 (5.5%)	4 Malaria	4 Preterm birth complications	1,992 (5.6%)	-14
2,288 (4.1%)	5 Preterm birth complications	5 Tuberculosis	1,537 (4.3%)	-17
2,234 (4.0%)	6 Protein-energy malnutrition	6 Protein-energy malnutrition	1,509 (4.2%)	-31
2,247 (4.0%)	7 Meningitis	7 Meningitis	1,347 (3.8%)	-40
2,121 (3.8%)	8 War & legal intervention	8 HIV/AIDS	1,248 (3.5%)	340
1,857 (3.3%)	9 Tuberculosis	9 Road injury	1,060 (3.0%)	20
1,400 (2.5%)	10 Tetanus	10 Neonatal sepsis	1,011 (2.8%)	-4
1,095 (2.0%)	11 Neonatal sepsis	11 Measles	1,009 (2.8%)	-86
979 (1.8%)	12 Congenital anomalies	12 Neonatal encephalopathy	804 (2.3%)	-10
881 (1.6%)	13 Maternal disorders	13 Stroke	642 (1.8%)	31
896 (1.6%)	14 Neonatal encephalopathy	14 Maternal disorders	577 (1.6%)	-36
838 (1.5%)	15 Road injury	15 Interpersonal violence	523 (1.5%)	71
744 (1.3%)	16 Syphilis	16 Syphilis	483 (1.4%)	-35
500 (0.9%)	17 Fire	17 Congenital anomalies	429 (1.2%)	-57
483 (0.9%)	18 Stroke	18 Fire	439 (1.2%)	-15
448 (0.8%)	19 COPD	19 Cirrhosis	393 (1.1%)	19
448 (0.8%)	20 Mechanical forces	20 Epilepsy	386 (1.1%)	38
1,469 (2.6%)	21 Whooping cough	21 Ischemic heart disease	355 (1.0%)	21
329 (0.6%)	22 Cirrhosis	22 Self-harm	297 (0.8%)	54
305 (0.5%)	23 HIV/AIDS	23 Mechanical forces	308 (0.9%)	-27
295 (0.5%)	24 Interpersonal violence	24 COPD	265 (0.7%)	-35
291 (0.5%)	25 Ischemic heart disease	25 Whooping cough	911 (2.5%)	-35
	27 Epilepsy	26 Tetanus		
	33 Self-harm			

This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.

## YEARS LIVED WITH DISABILITY (YLDs)

Years lived with disability (YLDs) are estimated by weighting the prevalence of different conditions based on severity. The top five leading causes of YLDs in Ethiopia are iron-deficiency anemia, low back pain, major depressive disorder, chronic obstructive pulmonary disease, and anxiety disorders.

The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.

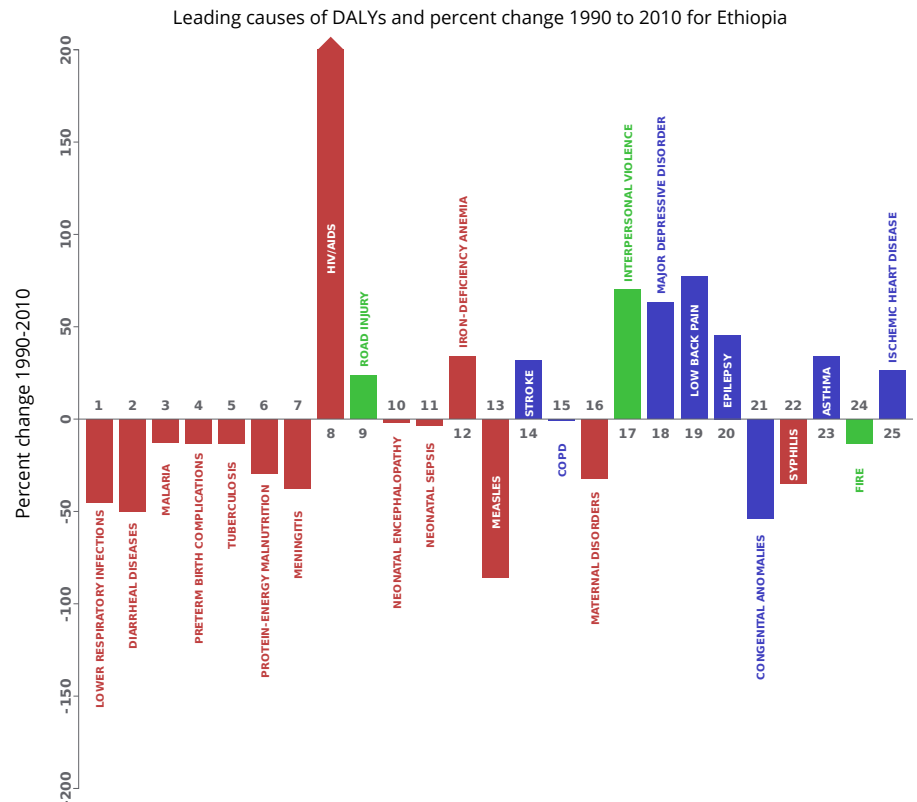


## DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Ethiopia, the top three causes of DALYs in 2010 were lower respiratory infections, diarrheal diseases, and malaria. The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were HIV/AIDS, road injury, and neonatal encephalopathy (birth asphyxia and birth trauma).

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

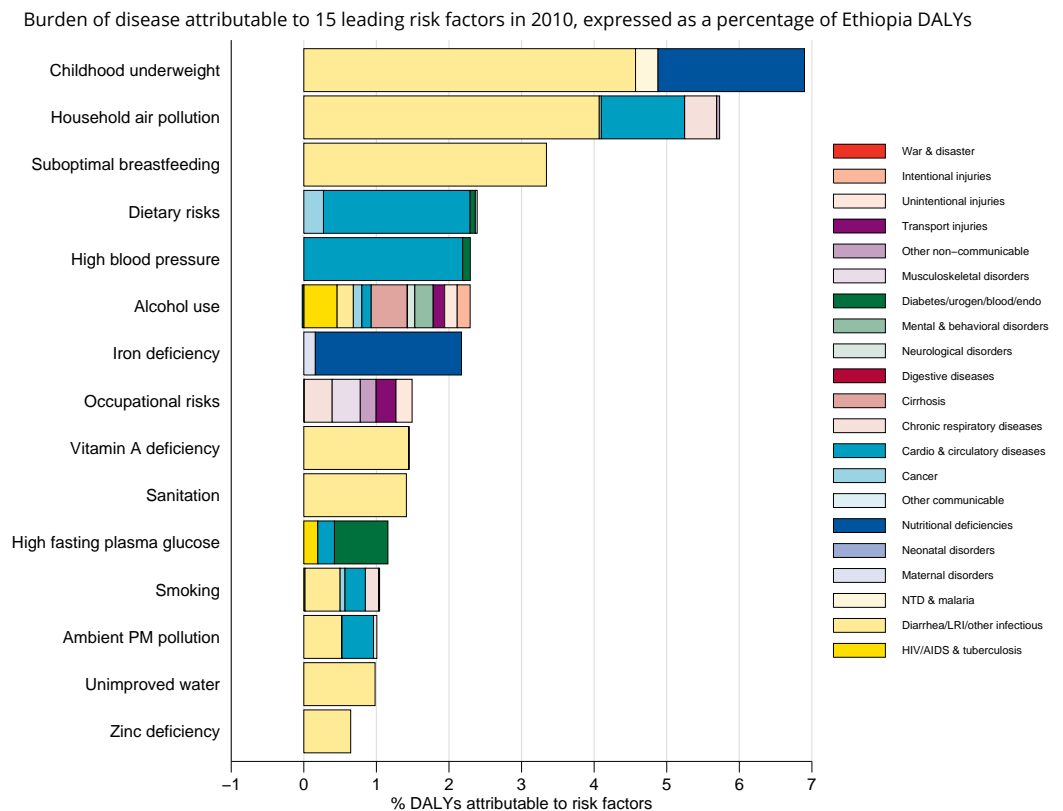
- Communicable, maternal, neonatal, and nutritional
- Non-communicable
- Injuries



## RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Ethiopia are childhood underweight, household air pollution from solid fuels, and suboptimal breastfeeding. The leading risk factors for children under 5 and adults aged 15-49 years were childhood underweight and alcohol use, respectively, in 2010.

The graph shows the top 15 risk factors for Ethiopia. The colored portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of DALYs linked to specific risk factors.



## COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Ethiopia against other comparator countries provides key insight into public health successes and areas where Ethiopia might be falling behind. The table identifies Ethiopia's rank across 14 other comparator countries, selected and ordered by income per capita, for five metrics of interest, with 1 indicating the best rank and 15 indicating the worst rank.

- Age-standardized rates are used to make meaningful comparisons across time by adjusting for changes in population size and age structure.
- Life expectancy incorporates mortality, and health-adjusted life expectancy further incorporates years lived in less than ideal health.
- In 2010, Ethiopia ranked 1st for age-standardized YLD rate and 5th for age-standardized death rate.

Age-standardized death rates, YLL rates, YLD rates, and life expectancy at birth and health-adjusted life expectancy at birth for 1990 and 2010, both sexes combined																				
Country	Age-standardized death rate (per 100,000)				Age-standardized YLL rate (per 100,000)				Age-standardized YLD rate (per 100,000)				Life expectancy at birth				Health-adjusted life expectancy at birth			
	1990		2010		1990		2010		1990		2010		1990		2010		1990		2010	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	LE	Rank	LE	Rank	HALE	Rank	HALE	Rank
Rwanda	2,000	13	1,062	1	76,083	10	35,591	1	15,064	8	13,895	2	49.7	9	64.6	1	42.3	8	54.8	1
Guinea-Bissau	1,603	5	1,391	9	72,398	7	55,214	10	14,670	6	14,148	6	50.8	7	56.6	10	42.8	6	48	8
Afghanistan	1,931	12	1,668	11	68,958	5	52,078	7	17,727	15	17,252	15	51.9	5	57.7	7	42.4	7	47.3	11
Madagascar	1,451	3	1,156	2	56,586	3	37,200	2	14,116	2	14,145	5	56.1	3	63.6	2	47.6	3	53.8	2
Togo	1,282	2	1,199	3	51,184	2	46,594	5	14,577	5	13,973	4	58.3	2	60.2	5	49.1	2	51	5
Mozambique	1,659	6	1,725	12	74,370	8	67,547	14	15,342	12	14,841	10	50	8	52.5	14	41.9	9	44.5	14
Sierra Leone	1,682	7	1,347	7	78,271	11	49,641	6	15,322	11	15,221	13	48.9	11	58.6	6	40.9	12	49.1	6
<b>Ethiopia</b>	<b>2,152</b>	<b>15</b>	<b>1,292</b>	<b>5</b>	<b>86,420</b>	<b>14</b>	<b>43,719</b>	<b>3</b>	<b>13,713</b>	<b>1</b>	<b>12,723</b>	<b>1</b>	<b>46.7</b>	<b>14</b>	<b>60.9</b>	<b>3</b>	<b>40.2</b>	<b>14</b>	<b>52.5</b>	<b>3</b>
Malawi	1,768	10	1,730	13	79,007	12	66,486	13	15,082	9	14,549	8	48.7	12	52.9	13	41	11	45	12
Central African Republic	2,131	14	2,408	15	81,026	13	90,581	15	15,696	14	15,022	11	48.3	13	46.2	15	40.8	13	39.5	15
Eritrea	1,807	11	1,353	8	67,111	4	44,346	4	15,508	13	14,614	9	52.4	4	60.6	4	44	4	51.2	4
Somalia	1,738	8	1,606	10	70,184	6	57,208	11	14,350	3	14,546	7	51.3	6	55.8	11	43.6	5	47.4	10
Niger	1,765	9	1,268	4	88,497	15	52,955	8	14,526	4	13,915	3	46.1	15	57.7	8	39	15	48.9	7
Zimbabwe	1,144	1	1,801	14	39,368	1	65,919	12	15,058	7	15,659	14	63	1	53.1	12	52.7	1	44.7	13
Liberia	1,585	4	1,333	6	75,995	9	53,808	9	15,298	10	15,200	12	49.6	10	57.2	9	41.4	10	47.7	9

## COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Ethiopia relative to the same comparator countries for the leading causes of DALYs in 1990 (top) and 2010 (bottom).

- The columns are ordered by the absolute number of DALYs in Ethiopia for that particular year, with greatest burden on the left.
- The numbers indicate the rank across countries for each cause in terms of age-standardized DALY rates, with 1 as the best performance and 15 as the worst.

Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 1990																											
Country	Lower respiratory infections	Measles	Diarrheal diseases	Malaria	Preterm birth complications	Protein-energy malnutrition	Meningitis	War & legal intervention	Tuberculosis	Tetanus	Neonatal sepsis	Congenital anomalies	Neonatal encephalopathy	Maternal disorders	Road injury	Syphilis	COPD	Iron-deficiency anemia	Fire	Stroke	Mechanical forces	Cirrhosis	Epilepsy	HIV/AIDS	Asthma		
Rwanda	6	2	5	9	7	7	3	12	11	2	7	7	9	12	15	6	12	1	9	13	7	14	6	14	5		
Guinea-Bissau	10	12	8	13	12	8	12	1	5	11	13	8	11	10	12	12	9	13	7	7	8	9	12	5	11		
Afghanistan	13	3	3	2	4	2	5	10	4	15	2	14	1	6	14	1	4	2	8	15	15	10	1	1	13		
Madagascar	3	10	6	4	10	10	2	1	1	3	8	12	2	3	8	14	8	3	5	14	6	6	7	6	4		
Togo	2	8	2	7	8	3	7	1	2	5	12	3	10	2	7	10	3	10	2	6	1	8	10	11	9		
Mozambique	9	11	7	15	11	4	9	11	12	4	15	4	14	8	2	15	1	8	12	1	12	3	11	3	1		
Sierra Leone	12	7	4	14	15	15	13	1	6	12	9	9	15	4	6	5	10	15	6	8	5	13	14	2	8		
<b>Ethiopia</b>	<b>14</b>	<b>15</b>	<b>9</b>	<b>5</b>	<b>13</b>	<b>6</b>	<b>11</b>	<b>14</b>	<b>14</b>	<b>5</b>	<b>10</b>	<b>6</b>	<b>14</b>	<b>11</b>	<b>8</b>	<b>13</b>	<b>5</b>	<b>15</b>	<b>4</b>	<b>14</b>	<b>15</b>	<b>4</b>	<b>8</b>	<b>12</b>			
Malawi	4	4	13	12	2	9	4	1	9	8	11	15	13	9	9	4	5	6	14	12	3	11	5	13	2		
Central African Republic	5	6	11	11	9	13	14	1	15	7	3	13	5	11	13	13	15	12	3	11	13	12	3	12	10		
Eritrea	8	14	12	3	1	11	6	1	13	6	4	1	4	15	5	9	11	11	10	10	10	4	8	4	6		
Somalia	11	5	10	8	5	12	8	13	10	9	6	6	7	13	10	3	7	4	11	9	11	2	9	10	7		
Niger	15	13	15	6	3	14	15	9	8	13	10	5	8	7	3	11	6	14	13	5	9	7	15	9	14		
Zimbabwe	1	1	1	1	6	1	1	1	3	1	1	2	3	1	1	2	2	7	1	2	4	1	2	15	3		
Liberia	7	9	14	10	14	5	10	15	7	10	14	11	12	5	4	7	14	9	4	3	2	5	13	7	15		
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																											
Country	Lower respiratory infections	Diarrheal diseases	Malaria	Preterm birth complications	Tuberculosis	Protein-energy malnutrition	Meningitis	HIV/AIDS	Road injury	Neonatal encephalopathy	Neonatal sepsis	Iron-deficiency anemia	Measles	Stroke	COPD	Maternal disorders	Interpersonal violence	Major depressive disorder	Low back pain	Epilepsy	Congenital anomalies	Syphilis	Asthma	Fire	Ischemic heart disease		
Rwanda	1	1	6	5	6	3	2	7	6	9	6	1	3	6	3	1	14	14	10	4	1	6	1	4	5		
Guinea-Bissau	7	11	15	11	4	9	14	8	11	12	13	12	6	8	6	8	5	2	9	15	12	9	6	7	11		
Afghanistan	8	2	1	12	3	1	5	1	14	1	1	2	2	15	12	10	15	15	15	1	14	1	12	8	15		
Madagascar	2	4	5	6	1	6	1	2	3	2	9	5	13	14	10	5	10	7	12	6	2	13	8	3	13		
Togo	6	8	10	9	2	5	10	11	5	10	14	8	11	5	1	2	6	4	8	12	10	12	10	5	8		
Mozambique	3	5	14	8	12	4	7	13	12	15	12	6	5	1	5	7	9	5	13	11	3	14	2	10	1		
Sierra Leone	5	3	11	15	7	14	12	6	4	13	8	15	9	9	4	6	3	8	6	10	7	3	3	1	9		
<b>Ethiopia</b>	<b>11</b>	<b>6</b>	<b>3</b>	<b>14</b>	<b>9</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>9</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>15</b>	<b>2</b>	<b>11</b>	<b>4</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>4</b>	<b>10</b>	<b>11</b>	<b>9</b>	<b>2</b>		
Malawi	9	9	7	1	8	7	4	14	13	11	10	4	4	13	8	13	2	10	2	7	13	7	5	15	12		
Central African Republic	14	15	12	13	15	15	15	12	15	6	3	13	7	12	15	15	12	9	4	3	15	15	13	13	14		
Eritrea	4	10	4	3	11	11	8	5	8	5	7	11	10	11	7	11	8	13	11	9	5	5	4	12	10		
Somalia	12	13	8	4	14	13	9	10	7	7	5	9	1	10	9	14	7	11	14	8	6	2	9	14	7		
Niger	15	14	9	2	5	12	13	3	1	4	11	14	14	4	2	9	1	3	5	13	8	11	7	11	6		
Zimbabwe	13	7	2	7	13	2	3	15	10	8	2	10	12	7	13	3	13	12	3	2	11	4	14	2	3		
Liberia	10	12	13	10	10	10	11	9	2	14	15	7	8	3	14	12	4	6	7	14	9	8	15	6	4		
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15																	