

# GBD PROFILE: NEPAL

## 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.

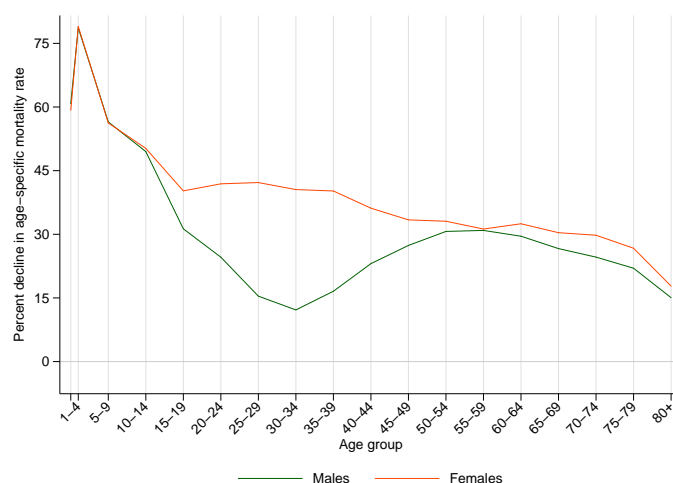
### PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Nepal, lower respiratory infections, diarrheal diseases, and neonatal encephalopathy (birth asphyxia and birth trauma) were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), congenital anomalies showed the largest decrease, falling by 66% from 1990 to 2010.
- The leading risk factor in Nepal is household air pollution from solid fuels.

### 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 (79%). Males aged 30-34 years saw the smallest decrease in mortality rate (12%).

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



### 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, Nepal

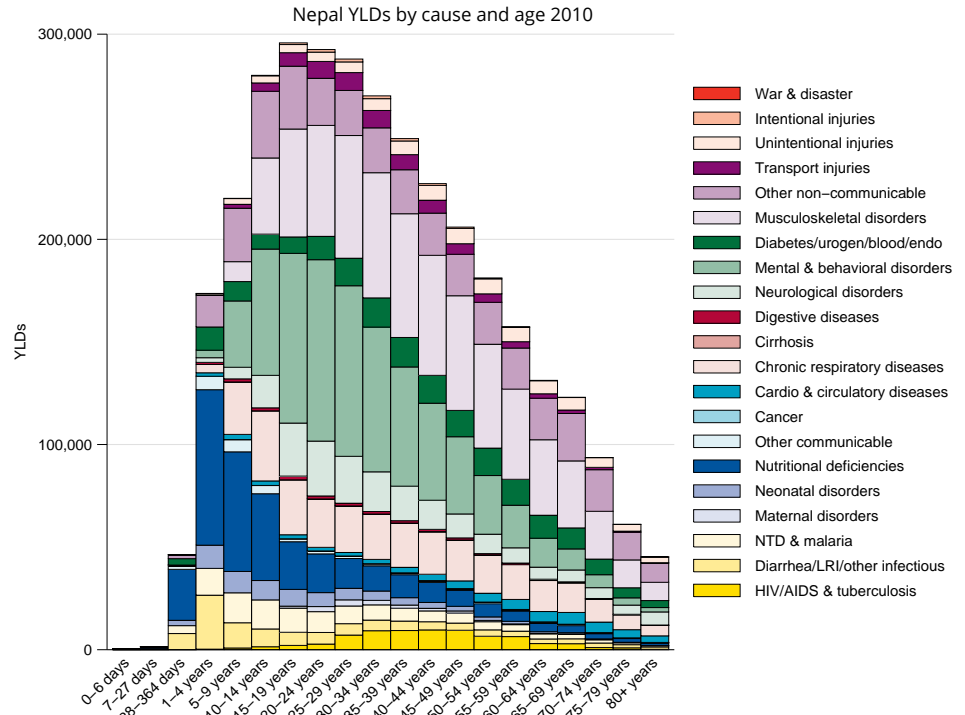
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
2,293 (18.9%)	1 Lower respiratory infections	1 Lower respiratory infections	846 (11.7%)	-63
2,069 (17.1%)	2 Diarrheal diseases	2 Diarrheal diseases	677 (9.4%)	-67
746 (6.2%)	3 Neonatal encephalopathy	3 Neonatal encephalopathy	407 (5.7%)	-43
531 (4.4%)	4 Preterm birth complications	4 Preterm birth complications	329 (4.6%)	-35
387 (3.2%)	5 Tuberculosis	5 Tuberculosis	295 (4.1%)	-23
330 (2.7%)	6 Congenital anomalies	6 Ischemic heart disease	277 (3.8%)	95
287 (2.4%)	7 COPD	7 Self-harm	254 (3.5%)	57
280 (2.3%)	8 Protein-energy malnutrition	8 COPD	249 (3.5%)	-13
288 (2.4%)	9 Tetanus	9 Neonatal sepsis	239 (3.3%)	-2
239 (2.0%)	10 Neonatal sepsis	10 Stroke	212 (2.9%)	67
226 (1.9%)	11 Syphilis	11 HIV/AIDS	209 (2.9%)	> 9,999
210 (1.7%)	12 Mechanical forces	12 Road injury	180 (2.5%)	13
255 (2.1%)	13 Measles	13 Mechanical forces	114 (1.6%)	-44
172 (1.4%)	14 Maternal disorders	14 Cirrhosis	104 (1.5%)	25
160 (1.3%)	15 Self-harm	15 Maternal disorders	101 (1.4%)	-44
156 (1.3%)	16 Road injury	16 Congenital anomalies	102 (1.4%)	-71
142 (1.2%)	17 Ischemic heart disease	17 Diabetes	88 (1.2%)	89
194 (1.6%)	18 Rabies	18 Syphilis	91 (1.3%)	-59
126 (1.0%)	19 Stroke	19 Poisonings	88 (1.2%)	-24
122 (1.0%)	20 Meningitis	20 Typhoid fevers	118 (1.6%)	49
141 (1.2%)	21 Glomerulonephritis	21 Protein-energy malnutrition	83 (1.2%)	-70
116 (1.0%)	22 Poisonings	22 Fire	66 (0.9%)	-30
106 (0.9%)	23 Peptic ulcer	23 Peptic ulcer	66 (0.9%)	-38
94 (0.8%)	24 Fire	24 Asthma	67 (0.9%)	-19
94 (0.8%)	25 Malaria	25 Meningitis	61 (0.8%)	-50
	26 Cirrhosis	26 Glomerulonephritis		
	28 Asthma	40 Tetanus		
	30 Typhoid fevers	44 Malaria		
	33 Diabetes	47 Rabies		
	110 HIV/AIDS	48 Measles		

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 Nepal are low back pain, iron-deficiency anemia, chronic obstructive pulmonary disease, major depressive disorder, and migraine.

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.

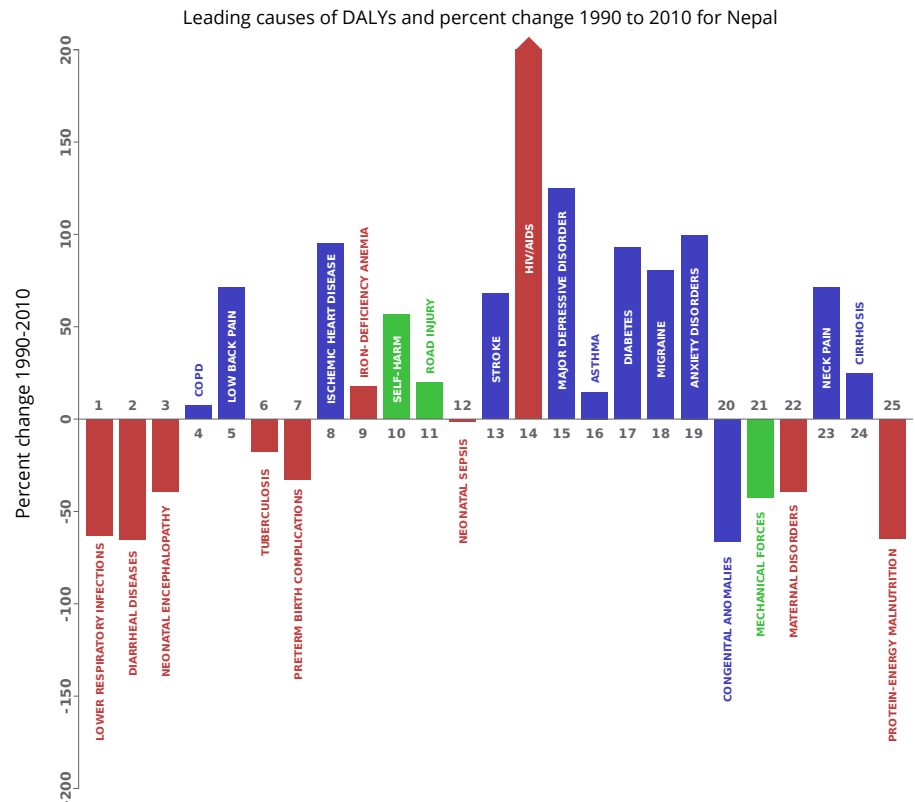


## DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Nepal, the top three causes of DALYs in 2010 were lower respiratory infections, diarrheal diseases, and neonatal encephalopathy (birth asphyxia and birth trauma). The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were low back pain, ischemic heart disease, and self-harm.

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.

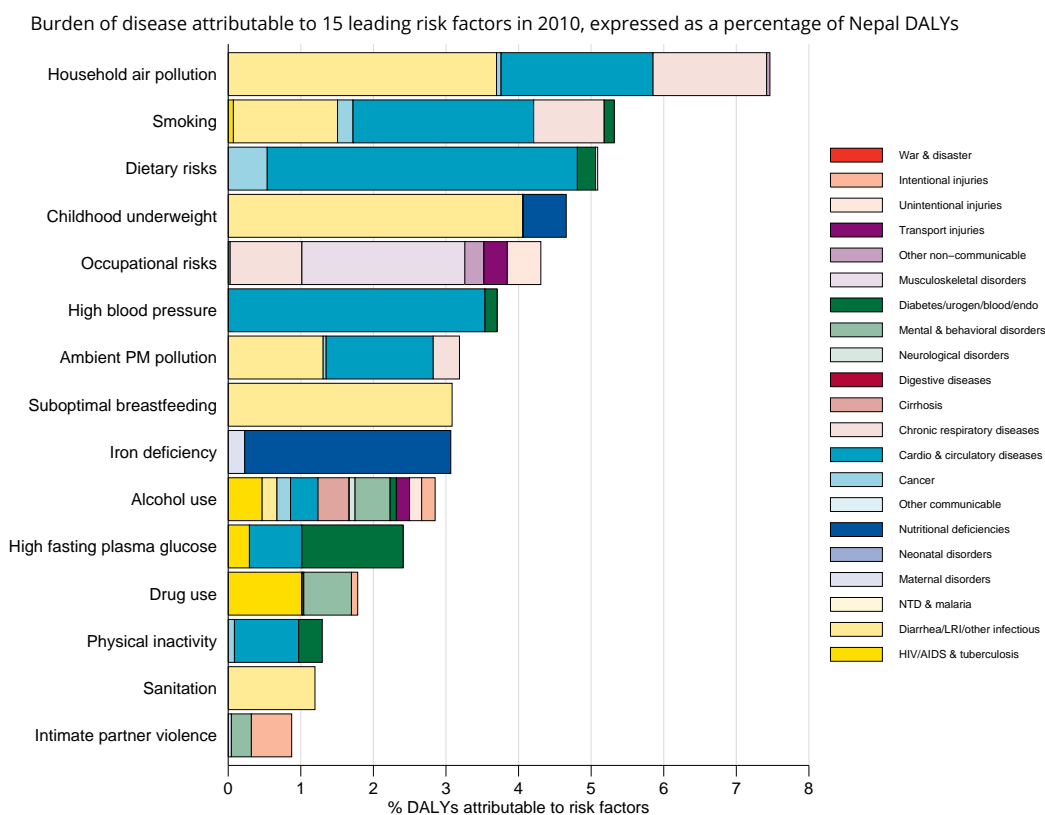
- Communicable, maternal, neonatal, and nutritional
- Non-communicable
- Injuries



## RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Nepal are household air pollution from solid fuels, tobacco smoking, and dietary risks. The leading risk factors for children under 5 and adults aged 15-49 years were childhood underweight and occupational risks, respectively, in 2010.

The graph shows the top 15 risk factors for Nepal. 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 Nepal against other comparator countries provides key insight into public health successes and areas where Nepal might be falling behind. The table identifies Nepal'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, Nepal ranked 1st for age-standardized death rate and 4th for age-standardized YLD 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
Ghana	1,185	2	1,030	4	45,628	3	35,128	4	14,555	7	13,298	6	60.5	3	64.9	4	50.9	3	55.3	5
Bangladesh	1,295	4	864	3	49,258	4	26,361	3	14,743	9	13,206	5	58.9	4	69	3	49.2	6	58.4	3
Lesotho	1,316	5	2,130	14	43,569	2	85,888	14	13,503	3	15,483	14	60.9	2	47.4	14	52	2	40.2	14
Zambia	1,722	13	1,533	13	73,053	12	57,620	12	15,030	12	13,732	8	50.6	12	55.8	12	42.7	12	47.8	12
North Korea	895	1	832	2	25,915	1	21,755	1	10,569	1	10,347	1	68.9	1	70.8	1	60.7	1	62.4	1
Haiti	1,717	12	3,321	15	61,823	9	137,295	15	15,059	13	16,428	15	54.1	9	37.2	15	45.7	9	31.8	15
Tanzania	1,357	6	1,137	6	55,603	8	43,461	8	14,553	6	14,177	12	56.6	7	61.7	8	47.8	8	52.2	8
<b>Nepal</b>	<b>1,285</b>	<b>3</b>	<b>832</b>	<b>1</b>	<b>49,745</b>	<b>5</b>	<b>26,361</b>	<b>2</b>	<b>13,660</b>	<b>5</b>	<b>12,959</b>	<b>4</b>	<b>58.8</b>	<b>5</b>	<b>69.2</b>	<b>2</b>	<b>49.8</b>	<b>4</b>	<b>58.8</b>	<b>2</b>
Comoros	1,439	7	1,223	8	52,340	6	38,959	7	13,050	2	12,879	3	57.5	6	62.8	7	49.5	5	54	7
Burkina Faso	1,521	9	1,396	12	68,852	10	59,507	13	14,862	11	13,409	7	52.1	10	55.2	13	43.8	10	47.1	13
Uganda	1,658	11	1,290	10	75,253	13	45,587	9	15,596	15	13,882	9	50.4	13	60.3	9	42.2	14	51.5	9
Mali	1,726	14	1,331	11	78,963	15	53,703	11	14,609	8	13,991	11	48.7	15	57.3	11	41.1	15	48.6	11
Guinea	1,508	8	1,233	9	69,094	11	48,350	10	14,811	10	14,194	13	52.1	11	59.4	10	43.7	11	50.2	10
Myanmar	1,640	10	1,185	7	55,134	7	36,251	6	13,542	4	11,974	2	56.5	8	63.9	6	48.6	7	55.6	4
Rwanda	2,000	15	1,062	5	76,083	14	35,591	5	15,064	14	13,895	10	49.7	14	64.6	5	42.3	13	54.8	6

## COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Nepal 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 Nepal 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	Diarrheal diseases	Neonatal encephalopathy	Preterm birth complications	Tuberculosis	COPD	Congenital anomalies	Protein-energy malnutrition	Tetanus	Iron-deficiency anemia	Low back pain	Neonatal sepsis	Syphilis	Mechanical forces	Road injury	Measles	Maternal disorders	Self-harm	Ischemic heart disease	Asthma	Meningitis	Rabies	Stroke	Glomerulonephritis	Poisonings		
Ghana	4	2	6	9	2	2	3	6	8	11	3	14	2	1	4	13	3	1	6	2	9	3	6	3	3		
Bangladesh	3	6	14	15	3	14	8	8	12	9	15	4	6	13	2	6	4	10	1	9	1	12	1	14	15		
Lesotho	2	5	4	7	14	11	11	2	1	6	6	3	7	14	1	4	2	6	5	11	4	6	11	2	6		
Zambia	9	4	8	1	10	4	4	14	2	3	5	6	12	5	12	5	7	11	9	3	11	5	8	7	14		
North Korea	1	1	1	2	1	13	15	1	3	1	8	1	1	2	7	1	1	15	11	1	2	1	10	1	4		
Haiti	5	14	7	6	12	1	6	4	13	15	4	12	14	6	6	2	10	5	15	8	10	8	15	10	1		
Tanzania	11	7	3	3	7	3	2	9	4	10	13	7	9	3	9	8	9	9	3	4	5	4	4	6	10		
<b>Nepal</b>	<b>12</b>	<b>10</b>	<b>15</b>	<b>11</b>	<b>8</b>	<b>15</b>	<b>13</b>	<b>5</b>	<b>14</b>	<b>8</b>	<b>14</b>	<b>5</b>	<b>8</b>	<b>15</b>	<b>5</b>	<b>9</b>	<b>5</b>	<b>14</b>	<b>7</b>	<b>12</b>	<b>3</b>	<b>15</b>	<b>3</b>	<b>15</b>	<b>13</b>		
Comoros	8	3	9	13	4	8	12	10	6	5	9	10	15	7	14	11	12	8	13	6	6	2	13	5	5		
Burkina Faso	14	15	2	5	5	7	7	7	10	13	7	11	3	8	13	10	8	3	2	10	13	11	2	9	8		
Uganda	10	9	10	4	13	5	5	11	11	7	11	9	10	4	10	12	11	7	4	5	12	7	5	11	12		
Mali	7	13	11	14	9	10	1	15	9	14	1	15	13	12	11	15	15	4	10	14	14	14	9	12	9		
Guinea	15	8	13	12	6	6	9	12	15	12	10	13	11	10	8	14	14	2	8	13	15	9	7	8	7		
Myanmar	6	12	12	8	15	12	14	3	7	4	2	2	4	11	3	7	6	12	12	15	7	10	12	4	2		
Rwanda	13	11	5	10	11	9	10	13	5	2	12	8	5	9	15	3	13	13	14	7	8	13	14	13	11		
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																											
Country	Lower respiratory infections	Diarrheal diseases	Neonatal encephalopathy	COPD	Low back pain	Tuberculosis	Preterm birth complications	Ischemic heart disease	Iron-deficiency anemia	Self-harm	Road injury	Neonatal sepsis	Stroke	HIV/AIDS	Major depressive disorder	Asthma	Diabetes	Migraine	Anxiety disorders	Congenital anomalies	Mechanical forces	Maternal disorders	Neck pain	Cirrhosis	Protein-energy malnutrition		
Ghana	8	3	3	4	3	2	7	14	10	1	8	14	9	11	5	2	7	11	7	7	1	6	8	11	10		
Bangladesh	2	2	15	14	15	3	15	3	7	8	1	3	1	2	3	9	4	14	11	9	11	2	1	9	5		
Lesotho	14	14	11	13	6	15	14	5	5	6	2	4	13	15	12	15	14	7	2	14	15	12	13	4	4		
Zambia	11	9	8	3	5	13	2	9	4	12	11	7	10	14	10	3	12	1	9	6	8	8	12	13	14		
North Korea	1	1	1	12	8	1	1	13	2	15	4	1	11	3	1	1	1	6	1	13	2	1	5	7	1		
Haiti	6	12	5	1	4	10	6	15	15	5	5	12	15	5	7	11	15	8	14	11	9	7	4	1	6		
Tanzania	10	6	6	2	12	6	3	1	11	11	9	6	2	13	13	4	3	5	13	2	6	13	9	2	9		
<b>Nepal</b>	<b>3</b>	<b>8</b>	<b>12</b>	<b>15</b>	<b>14</b>	<b>5</b>	<b>5</b>	<b>11</b>	<b>6</b>	<b>14</b>	<b>3</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>10</b>	<b>2</b>	<b>15</b>	<b>12</b>	<b>4</b>	<b>14</b>	<b>3</b>	<b>2</b>	<b>6</b>	<b>3</b>		
Comoros	12	7	9	9	9	9	12	6	9	10	14	10	12	1	11	7	9	4	10	8	12	11	14	3	11		
Burkina Faso	15	15	2	8	7	4	10	7	13	4	15	11	5	8	4	8	13	13	3	12	10	9	10	12	13		
Uganda	4	4	7	7	13	14	4	2	8	9	13	9	4	12	14	6	6	2	6	3	5	10	11	14	7		
Mali	7	13	13	10	1	8	13	12	14	3	10	15	7	9	9	13	10	12	5	1	7	14	7	10	15		
Guinea	13	10	14	6	10	7	11	10	12	2	7	13	6	6	6	12	8	10	8	10	4	15	6	8	12		
Myanmar	9	11	10	11	2	12	8	8	1	13	6	2	14	7	8	14	11	9	4	15	13	4	3	15	2		
Rwanda	5	5	4	5	11	11	9	4	3	7	12	8	8	10	15	5	5	3	15	5	3	5	15	5	8		
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15																	