

# GBD PROFILE: SOUTH AFRICA

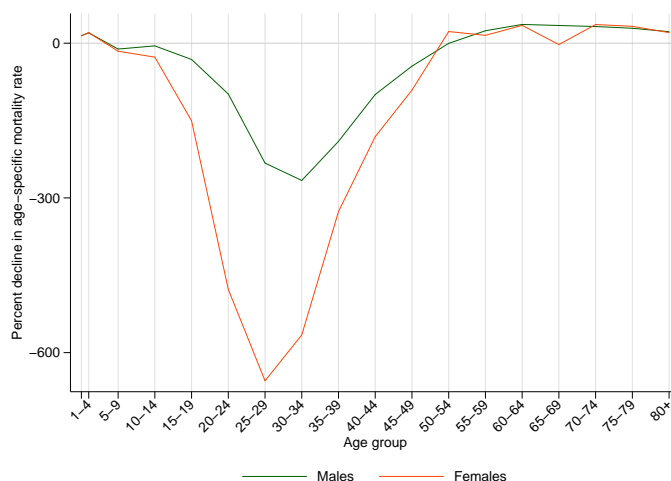
## GLOBAL BURDEN OF DISEASES, INJURIES, AND RISK FACTORS STUDY 2010

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 South Africa, HIV/AIDS, diarrheal diseases, and interpersonal violence 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 32% from 1990 to 2010.
- The leading risk factor in South Africa is alcohol use.

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



### ALL-CAUSE MORTALITY RATE

- This chart shows the change in mortality rate at every age range. The points above 0 on the chart indicate positive declines in the all-cause mortality rate, while points below 0 indicate an increase in mortality rate between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by males aged 60-64 years (36%). Females aged 25-29 years saw the largest increase in mortality rate (655%).

### 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, South Africa

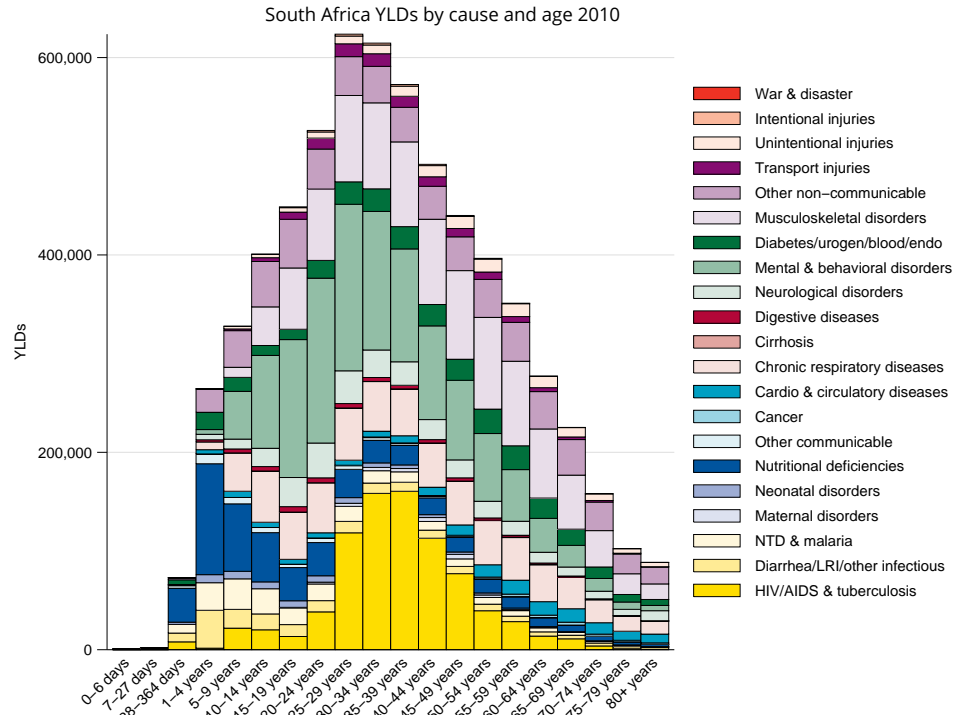
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
1,413 (12.2%)	1 Diarrheal diseases	1 HIV/AIDS	11,201 (47.9%)	4,962
1,083 (9.3%)	2 Lower respiratory infections	2 Diarrheal diseases	1,138 (4.9%)	-20
668 (5.8%)	3 Tuberculosis	3 Interpersonal violence	1,018 (4.4%)	32
692 (6.0%)	4 Interpersonal violence	4 Lower respiratory infections	873 (3.7%)	-20
524 (4.5%)	5 Preterm birth complications	5 Tuberculosis	760 (3.3%)	15
467 (4.0%)	6 Stroke	6 Stroke	543 (2.3%)	10
367 (3.2%)	7 Ischemic heart disease	7 Preterm birth complications	500 (2.1%)	-4
349 (3.0%)	8 Neonatal encephalopathy	8 Diabetes	489 (2.1%)	96
297 (2.6%)	9 Mechanical forces	9 Mechanical forces	393 (1.7%)	38
271 (2.3%)	10 Congenital anomalies	10 Ischemic heart disease	383 (1.6%)	1
247 (2.1%)	11 Diabetes	11 Neonatal encephalopathy	341 (1.5%)	-2
223 (1.9%)	12 HIV/AIDS	12 Road injury	237 (1.0%)	83
203 (1.8%)	13 Protein-energy malnutrition	13 Chronic kidney disease	211 (0.9%)	138
199 (1.7%)	14 Syphilis	14 Hypertensive heart disease	213 (0.9%)	90
216 (1.9%)	15 Measles	15 Drug use disorders	212 (0.9%)	2,079
162 (1.4%)	16 Meningitis	16 Cardiomyopathy	177 (0.8%)	50
195 (1.7%)	17 Typhoid fevers	17 Congenital anomalies	179 (0.8%)	-36
143 (1.2%)	18 COPD	18 Epilepsy	166 (0.7%)	51
142 (1.2%)	19 Fire	19 Fire	160 (0.7%)	18
138 (1.2%)	20 Drowning	20 Neonatal sepsis	155 (0.7%)	10
134 (1.2%)	21 Road injury	21 Meningitis	140 (0.6%)	-14
139 (1.2%)	22 Neonatal sepsis	22 Typhoid fevers	172 (0.7%)	-14
123 (1.1%)	23 Lung cancer	23 Other cardio & circulatory	129 (0.6%)	21
117 (1.0%)	24 Cardiomyopathy	24 COPD	120 (0.5%)	-13
112 (1.0%)	25 Hypertensive heart disease	25 Maternal disorders	115 (0.5%)	57
	26 Other cardio & circulatory	26 Drowning		
	28 Epilepsy	27 Lung cancer		
	30 Chronic kidney disease	31 Syphilis		
	35 Maternal disorders	39 Measles		
	67 Drug use disorders	47 Protein-energy malnutrition		

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 South Africa are HIV/AIDS, major depressive disorder, low back pain, iron-deficiency anemia, and chronic obstructive pulmonary disease.

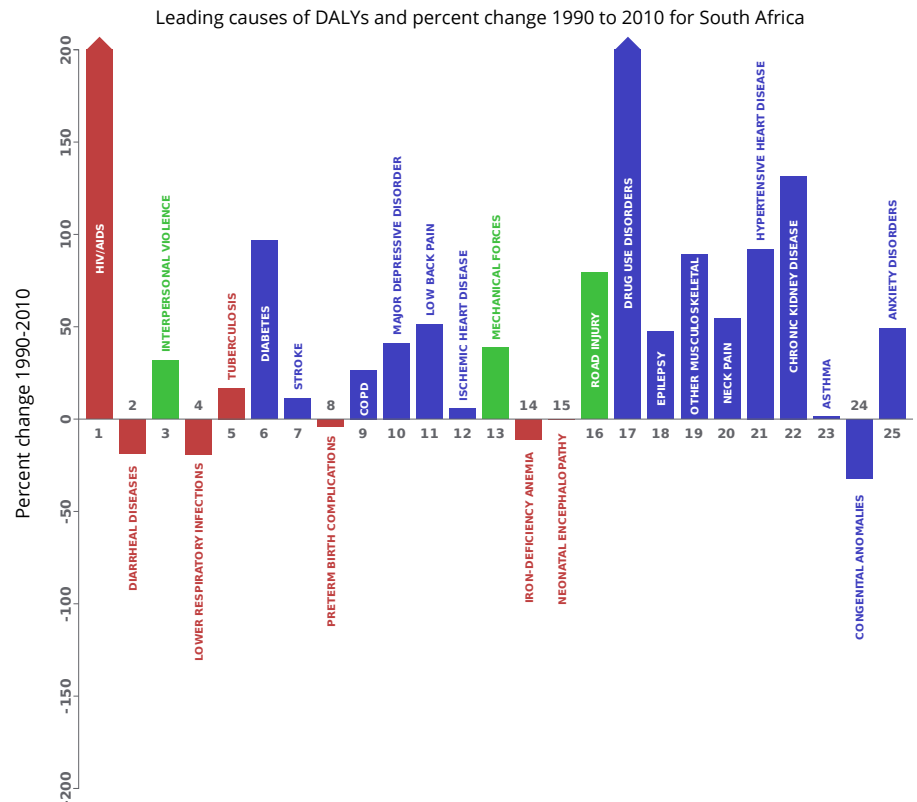
The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.



## DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In South Africa, the top three causes of DALYs in 2010 were HIV/AIDS, diarrheal diseases, and interpersonal violence. The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were HIV/AIDS, diabetes mellitus, and major depressive disorder.

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.

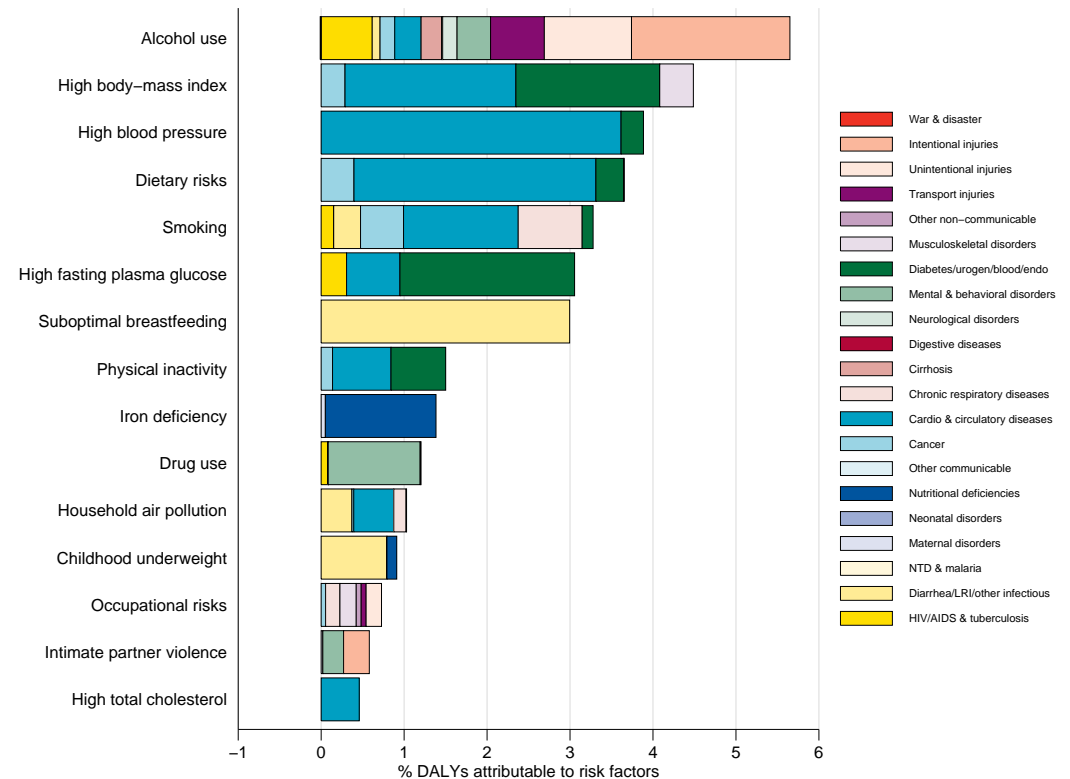


## RISK FACTORS

Overall, the three risk factors that account for the most disease burden in South Africa are alcohol use, high body-mass index, and high blood pressure. The leading risk factors for children under 5 and adults aged 15-49 years were suboptimal breastfeeding and alcohol use, respectively, in 2010.

Burden of disease attributable to 15 leading risk factors in 2010, expressed as a percentage of South Africa DALYs

The graph shows the top 15 risk factors for South Africa. 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 South Africa against other comparator countries provides key insight into public health successes and areas where South Africa might be falling behind. The table identifies South Africa'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, South Africa ranked 15th for age-standardized death rate and 15th for age-standardized YLL 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
Kazakhstan	1,043	14	1,043	14	31,524	14	29,881	14	11,955	5	11,587	4	66.2	14	66.7	14	57.3	13	58.2	14
Costa Rica	556	1	462	1	13,705	1	10,447	1	11,672	2	10,948	1	76.6	1	79.4	1	66	1	68.9	1
Romania	895	11	712	12	23,494	8	16,325	7	11,261	1	11,043	2	69.9	9	73.8	10	60.9	9	64.4	7
Panama	634	2	545	3	16,812	4	14,027	6	12,186	9	11,151	3	74.5	3	76.7	4	63.9	3	66.5	2
Iran	934	13	640	7	29,033	13	16,780	9	13,288	15	12,619	10	67.5	13	74.4	8	57.2	14	63.2	9
Brazil	854	8	670	8	26,370	10	17,580	10	12,016	6	11,637	5	69.1	10	74.1	9	59.4	10	63.8	8
Serbia	698	6	572	4	16,985	5	12,077	3	12,440	11	11,833	7	73.7	5	76.7	3	63	6	66	3
<b>South Africa</b>	<b>1,133</b>	<b>15</b>	<b>1,266</b>	<b>15</b>	<b>34,540</b>	<b>15</b>	<b>48,286</b>	<b>15</b>	<b>12,905</b>	<b>13</b>	<b>13,826</b>	<b>15</b>	<b>64.6</b>	<b>15</b>	<b>59.9</b>	<b>15</b>	<b>55.5</b>	<b>15</b>	<b>51</b>	<b>15</b>
Cuba	635	3	543	2	15,919	2	11,088	2	11,765	3	12,791	11	74.8	2	77.9	2	64.6	2	65.2	4
Montenegro	674	4	637	6	16,059	3	13,549	4	12,222	10	12,180	8	74.4	4	75.6	5	63.6	4	64.7	6
Suriname	922	12	693	11	27,022	12	20,892	13	12,827	12	12,945	13	68.5	12	72.6	12	58.6	11	60.7	12
Jamaica	676	5	610	5	18,618	6	16,417	8	12,075	7	12,909	12	73.6	6	75.3	6	63.2	5	62.8	10
Macedonia	873	9	682	9	21,414	7	13,939	5	11,940	4	11,694	6	70.9	7	75	7	61.2	7	64.8	5
Saint Vincent and the Grenadines	890	10	753	13	26,567	11	20,602	12	13,233	14	13,056	14	68.7	11	72	13	58.5	12	60.2	13
Dominican Republic	765	7	683	10	23,701	9	18,385	11	12,154	8	12,232	9	70.8	8	73.7	11	60.9	8	62.2	11

## COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of South Africa 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 South Africa 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	Diartheal diseases	Lower respiratory infections	Tuberculosis	Interpersonal violence	Preterm birth complications	Stroke	Iron-deficiency anemia	Ischemic heart disease	COPD	Neonatal encephalopathy	Major depressive disorder	Diabetes	Congenital anomalies	Mechanical forces	Low back pain	HIV/AIDS	Asthma	Protein-energy malnutrition	Syphilis	Meningitis	Road injury	Measles	Epilepsy	Typhoid fevers	Neck pain		
Kazakhstan	11	15	14	13	10	13	8	15	14	15	4	3	14	14	10	3	3	7	2	8	14	7	9	5	13		
Costa Rica	5	3	5	5	4	1	4	2	7	5	7	2	12	5	8	6	14	6	7	4	6	8	13	8	4		
Romania	3	14	11	2	2	14	5	13	13	2	2	1	13	12	11	4	4	5	8	5	11	6	5	2	14		
Panama	8	6	12	10	5	3	6	3	9	7	13	5	8	11	7	9	11	13	10	6	9	12	14	12	2		
Iran	7	7	7	4	9	5	9	14	10	1	14	4	15	13	15	2	6	14	9	9	15	14	7	14	1		
Brazil	12	12	10	14	12	9	7	6	12	11	5	7	7	3	9	13	8	10	14	13	13	11	8	7	9		
Serbia	1	2	4	3	7	12	1	8	8	6	9	6	6	1	13	8	2	3	4	1	7	9	3	4	12		
<b>South Africa</b>	<b>15</b>	<b>13</b>	<b>15</b>	<b>15</b>	<b>8</b>	<b>10</b>	<b>11</b>	<b>4</b>	<b>15</b>	<b>9</b>	<b>3</b>	<b>13</b>	<b>3</b>	<b>15</b>	<b>6</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>3</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>		
Cuba	4	4	1	8	1	2	10	9	6	3	1	10	5	8	3	5	12	1	1	7	12	1	2	9	8		
Montenegro	2	1	3	6	3	11	3	10	1	8	10	9	1	4	14	1	1	4	3	2	5	2	1	1	11		
Suriname	13	10	9	7	15	8	13	11	5	14	11	12	11	7	4	15	10	8	13	12	8	10	10	1	3		
Jamaica	9	5	2	12	6	7	12	1	3	12	6	14	2	6	5	11	9	9	11	10	1	4	11	6	6		
Macedonia	10	8	6	1	11	15	2	12	11	4	8	8	10	2	12	7	5	2	5	3	4	5	4	3	10		
Saint Vincent and the Grenadines	6	11	8	9	14	6	15	5	2	13	15	15	4	9	2	12	13	12	12	11	2	3	12	13	7		
Dominican Republic	14	9	13	11	13	4	14	7	4	10	12	11	9	10	1	10	7	11	6	15	10	13	6	11	5		
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																											
Country	HIV/AIDS	Diartheal diseases	Interpersonal violence	Lower respiratory infections	Tuberculosis	Diabetes	Stroke	Preterm birth complications	COPD	Major depressive disorder	Low back pain	Ischemic heart disease	Mechanical forces	Iron-deficiency anemia	Neonatal encephalopathy	Road injury	Drug use disorders	Epilepsy	Other musculoskeletal	Neck pain	Hypertensive heart disease	Chronic kidney disease	Asthma	Congenital anomalies	Anxiety disorders		
Kazakhstan	8	9	9	14	14	4	15	11	14	2	10	15	14	9	15	14	4	12	12	14	11	7	1	15	9		
Costa Rica	7	6	7	4	5	1	1	5	7	7	7	3	1	3	5	7	7	13	14	6	4	12	15	8	5		
Romania	3	3	2	13	12	2	13	2	12	3	13	13	8	5	1	8	2	5	6	13	14	2	4	7	1		
Panama	12	12	10	8	13	10	2	6	6	6	8	4	5	7	7	10	8	14	11	7	2	13	11	11	6		
Iran	4	7	5	6	8	7	4	9	9	15	15	14	10	8	6	15	13	8	1	1	10	1	6	14	13		
Brazil	9	10	14	11	10	8	6	10	13	12	9	6	3	6	11	12	11	7	10	9	6	8	9	10	8		
Serbia	6	1	3	1	4	6	12	3	10	1	12	9	4	1	2	6	5	2	9	10	5	3	3	2	15		
<b>South Africa</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>13</b>	<b>8</b>	<b>12</b>	<b>15</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>15</b>	<b>11</b>	<b>13</b>	<b>3</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>8</b>	<b>5</b>	<b>2</b>		
Cuba	5	5	6	7	1	5	3	1	11	13	2	8	7	10	4	4	6	1	4	8	3	6	14	3	7		
Montenegro	1	2	4	3	3	3	11	4	1	14	11	11	6	4	8	9	3	4	7	11	1	4	2	1	14		
Suriname	14	11	8	9	9	12	10	15	2	11	5	5	9	15	14	11	12	10	8	5	7	15	10	13	4		
Jamaica	13	14	13	5	2	14	9	7	4	8	4	1	11	12	12	1	9	11	3	3	13	10	13	6	12		
Macedonia	2	4	1	2	7	9	14	8	8	9	14	12	2	2	3	2	1	3	5	12	8	5	5	4	11		
Saint Vincent and the Grenadines	11	8	12	10	6	15	5	14	3	10	3	7	12	14	9	5	14	9	13	2	12	9	12	9	3		
Dominican Republic	10	13	11	12	11	11	7	13	5	4	1	10	13	13	10	13	10	6	2	4	9	11	7	12	10		
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15																	