

# GBD PROFILE: BULGARIA

## 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.

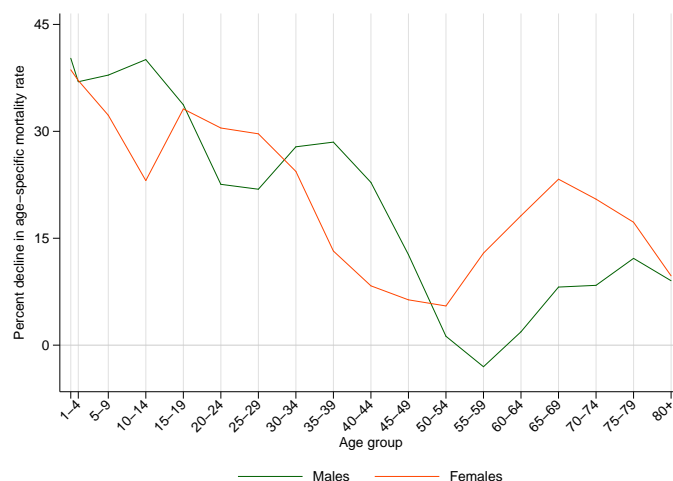
### PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Bulgaria, ischemic heart disease, cerebrovascular disease, and trachea, bronchus, and lung cancers were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), lower respiratory infections showed the largest decrease, falling by 54% from 1990 to 2010.
- The leading risk factor in Bulgaria is high blood pressure.

### 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 <1 year (40%). Males aged 55-59 years saw the largest increase in mortality rate (3%).

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



### 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, Bulgaria

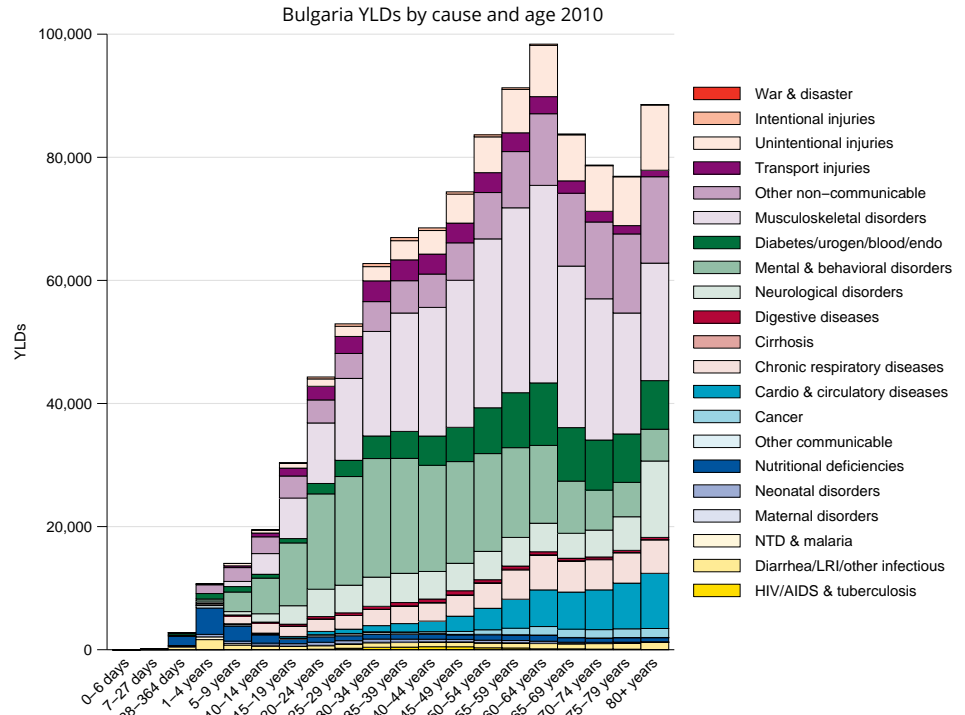
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
511 (23.4%)	1 Ischemic heart disease	1 Ischemic heart disease	465 (24.2%)	-9
433 (19.8%)	2 Stroke	2 Stroke	369 (19.2%)	-16
106 (4.8%)	3 Lower respiratory infections	3 Lung cancer	80 (4.2%)	-2
82 (3.8%)	4 Lung cancer	4 Hypertensive heart disease	80 (4.2%)	54
54 (2.5%)	5 Road injury	5 COPD	62 (3.2%)	34
53 (2.4%)	6 Other cardio & circulatory	6 Other cardio & circulatory	62 (3.2%)	17
55 (2.5%)	7 Hypertensive heart disease	7 Lower respiratory infections	52 (2.7%)	-55
51 (2.3%)	8 Self-harm	8 Colorectal cancer	48 (2.5%)	13
50 (2.3%)	9 Stomach cancer	9 Cirrhosis	43 (2.2%)	-8
47 (2.2%)	10 Cirrhosis	10 Road injury	37 (1.9%)	-31
47 (2.1%)	11 Congenital anomalies	11 Diabetes	36 (1.9%)	-5
46 (2.1%)	12 COPD	12 Self-harm	35 (1.8%)	-36
43 (2.0%)	13 Colorectal cancer	13 Cardiomyopathy	33 (1.7%)	154
38 (1.7%)	14 Diabetes	14 Stomach cancer	31 (1.6%)	-39
30 (1.4%)	15 Breast cancer	15 Breast cancer	29 (1.5%)	-5
23 (1.1%)	16 Rheumatic heart disease	16 Congenital anomalies	20 (1.0%)	-58
21 (1.0%)	17 Falls	17 Pancreatic cancer	20 (1.0%)	14
21 (0.9%)	18 Liver cancer	18 Rheumatic heart disease	18 (1.0%)	-19
20 (0.9%)	19 Preterm birth complications	19 Liver cancer	18 (1.0%)	-11
18 (0.8%)	20 Brain cancer	20 Brain cancer	18 (0.9%)	3
18 (0.8%)	21 Pancreatic cancer	21 Chronic kidney disease	17 (0.9%)	16
16 (0.7%)	22 Leukemia	22 Falls	14 (0.7%)	-36
15 (0.7%)	23 Drowning	23 Cervical cancer	12 (0.6%)	-4
15 (0.7%)	24 Chronic kidney disease	24 Preterm birth complications	12 (0.6%)	-41
15 (0.7%)	25 Interpersonal violence	25 Leukemia	12 (0.6%)	-26
	26 Cardiomyopathy	31 Interpersonal violence		
	27 Cervical cancer	35 Drowning		

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 Bulgaria are low back pain, major depressive disorder, falls, other musculoskeletal disorders, and neck pain.

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.

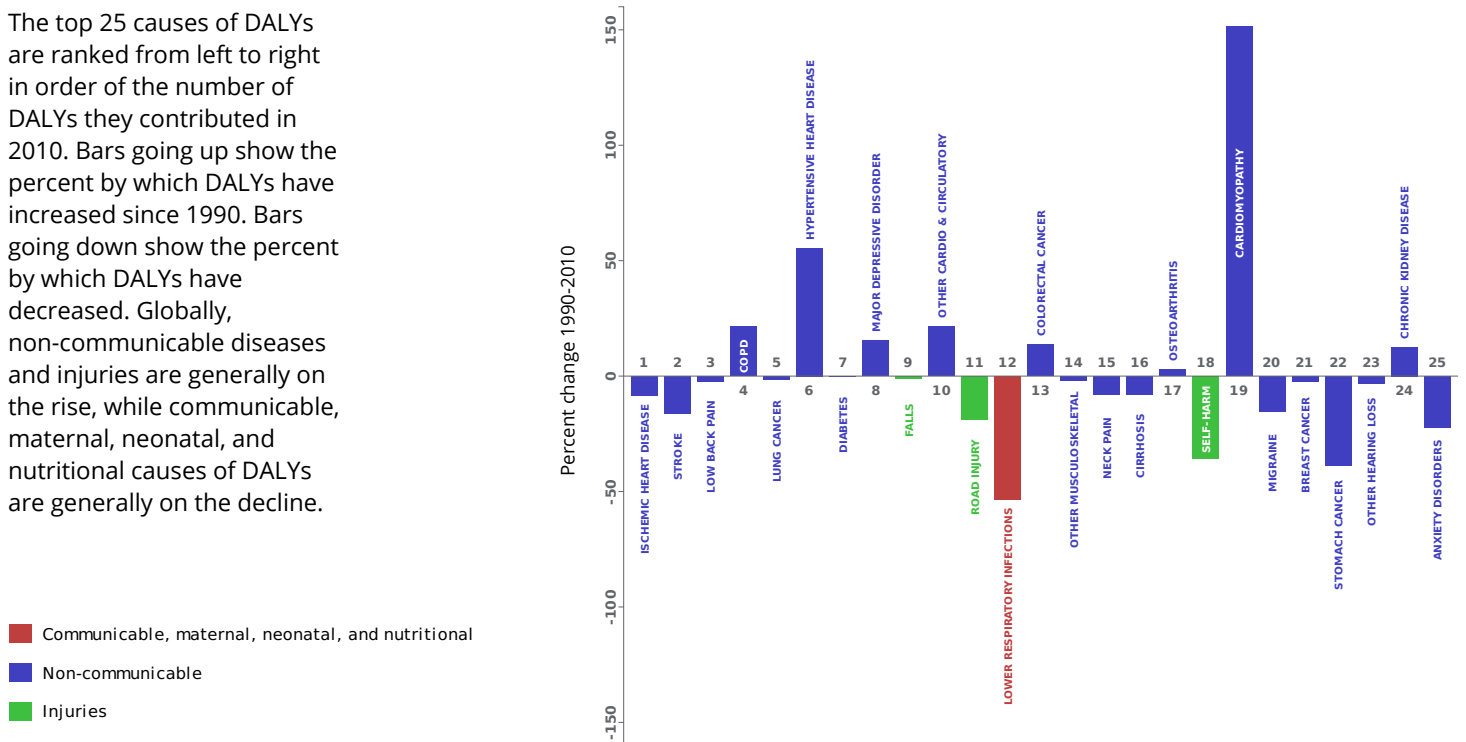


## DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Bulgaria, the top three causes of DALYs in 2010 were ischemic heart disease, cerebrovascular disease, and low back pain. Two causes that appeared in the 10 leading causes of DALYs in 2010 and not 1990 were hypertensive heart disease and other cardiovascular and circulatory diseases.

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.

Leading causes of DALYs and percent change 1990-2010 for Bulgaria

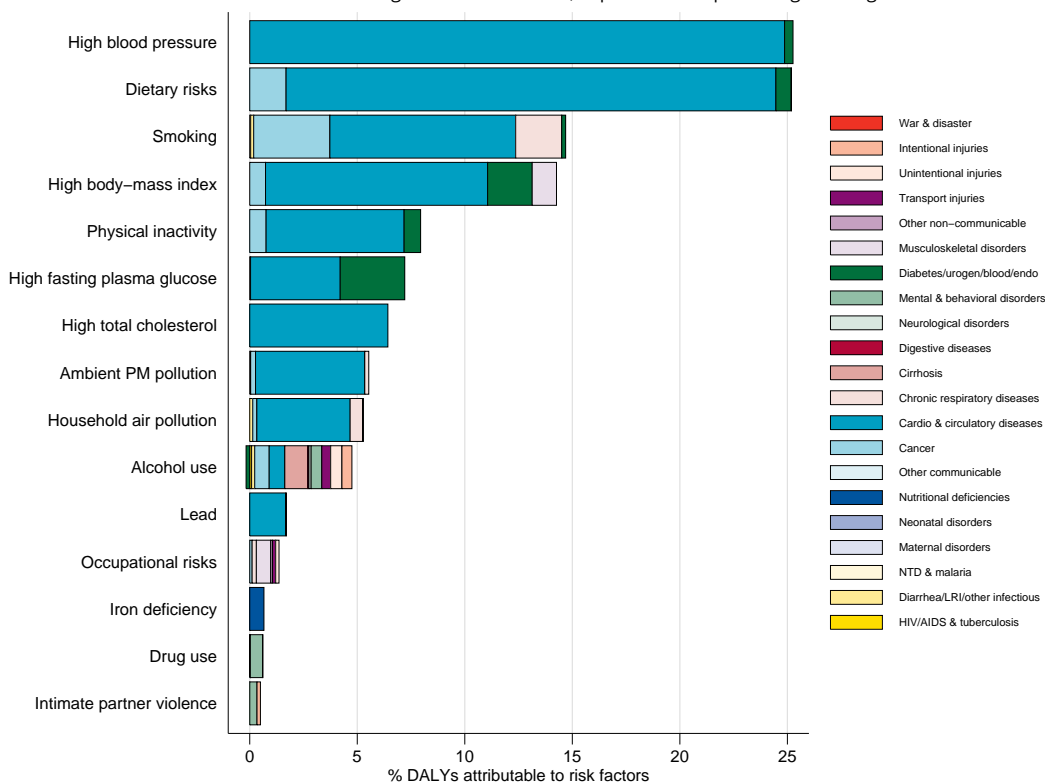


## RISK FACTORS

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

The graph shows the top 15 risk factors for Bulgaria. 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.

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



## COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Bulgaria against other comparator countries provides key insight into public health successes and areas where Bulgaria might be falling behind. The table identifies Bulgaria'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, Bulgaria ranked 7th for age-standardized YLL rate and 11th 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
Malaysia	825	6	726	10	19,850	5	16,000	5	11,926	10	11,186	9	71.6	5	73.7	8	62.1	6	64.4	6
Argentina	731	3	597	4	19,400	3	14,343	4	11,154	3	10,843	2	72.5	4	76	4	63.2	3	66.1	4
Botswana	951	13	715	8	31,563	15	26,692	14	13,528	15	14,557	15	66.7	14	71	13	56.6	15	59.2	14
Lebanon	775	5	514	2	21,908	7	11,877	2	11,630	8	11,150	8	71.2	7	77.5	2	61.4	7	66.7	3
Turkey	942	12	628	5	30,025	13	16,760	8	12,442	12	11,885	12	67.1	13	74.4	6	57.6	13	63.9	10
Uruguay	731	4	585	3	18,332	2	13,126	3	11,007	2	10,540	1	73	2	76.5	3	63.8	2	67	2
Belarus	877	8	914	14	22,551	8	22,829	13	11,589	7	11,578	10	70.4	8	70	14	61.2	8	60.9	12
<b>Bulgaria</b>	<b>864</b>	<b>7</b>	<b>747</b>	<b>11</b>	<b>20,104</b>	<b>6</b>	<b>16,486</b>	<b>7</b>	<b>10,860</b>	<b>1</b>	<b>11,095</b>	<b>7</b>	<b>71.4</b>	<b>6</b>	<b>73.5</b>	<b>10</b>	<b>62.5</b>	<b>5</b>	<b>64.1</b>	<b>8</b>
Mauritius	1,014	14	766	12	24,451	10	17,273	10	11,333	5	10,953	4	68.9	10	73.2	11	60.3	10	63.9	9
Saint Lucia	891	9	722	9	25,875	11	17,785	11	13,328	14	14,233	14	68.9	11	73.7	9	58.6	12	61.6	11
Venezuela	716	2	630	6	19,688	4	17,271	9	11,583	6	10,994	5	72.6	3	74.5	5	62.8	4	64.9	5
Grenada	904	11	850	13	25,983	12	21,313	12	13,149	13	13,076	13	68.9	12	71	12	58.7	11	59.6	13
Kazakhstan	1,043	15	1,043	15	31,524	14	29,881	15	11,955	11	11,587	11	66.2	15	66.7	15	57.3	14	58.2	15
Costa Rica	556	1	462	1	13,705	1	10,447	1	11,672	9	10,948	3	76.6	1	79.4	1	66	1	68.9	1
Romania	895	10	712	7	23,494	9	16,325	6	11,261	4	11,043	6	69.9	9	73.8	7	60.9	9	64.4	7

## COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Bulgaria 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 Bulgaria 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	Ischemic heart disease	Stroke	Low back pain	Lower respiratory infections	COPD	Lung cancer	Road injury	Diabetes	Falls	Major depressive disorder	Other cardio & circulatory	Hypertensive heart disease	Self-harm	Congenital anomalies	Stomach cancer	Neck pain	Cirrhosis	Other musculoskeletal	Colorectal cancer	Migraine	Osteoarthritis	Breast cancer	Anxiety disorders	Other hearing loss	Rheumatic heart disease
Malaysia	8	7	1	8	13	8	8	9	11	12	14	4	4	3	3	2	5	2	8	8	2	4	9	4	7
Argentina	5	6	6	4	5	9	3	5	8	5	8	6	9	9	6	15	8	15	12	1	3	14	14	10	12
Botswana	1	5	7	11	14	4	4	11	1	6	10	15	3	1	2	13	3	8	1	4	7	1	5	14	6
Lebanon	10	3	10	5	8	7	10	10	15	8	5	8	1	14	1	3	1	4	7	3	1	13	6	1	11
Turkey	13	15	12	13	10	14	9	7	9	14	11	13	2	11	9	1	4	3	9	6	14	5	15	2	15
Uruguay	4	4	5	3	4	13	5	6	7	3	6	2	11	7	8	14	6	14	15	2	4	15	12	12	3
Belarus	14	8	13	2	9	12	13	2	10	10	1	1	14	15	14	9	2	10	13	11	6	11	3	13	13
<b>Bulgaria</b>	<b>11</b>	<b>14</b>	<b>15</b>	<b>9</b>	<b>7</b>	<b>10</b>	<b>7</b>	<b>8</b>	<b>13</b>	<b>1</b>	<b>9</b>	<b>9</b>	<b>12</b>	<b>8</b>	<b>12</b>	<b>12</b>	<b>9</b>	<b>6</b>	<b>14</b>	<b>15</b>	<b>9</b>	<b>10</b>	<b>4</b>	<b>8</b>	<b>10</b>
Mauritius	15	13	2	7	11	5	2	15	3	7	7	14	13	2	5	4	14	1	2	12	5	3	2	9	8
Saint Lucia	3	9	4	10	6	2	12	14	4	9	12	12	7	6	7	5	13	7	3	10	10	12	7	3	4
Venezuela	6	2	9	6	2	6	14	12	6	13	3	11	8	4	11	8	11	13	5	5	11	6	10	11	2
Grenada	7	10	3	12	1	1	1	13	5	15	15	7	5	5	4	6	7	9	4	9	13	2	13	6	5
Kazakhstan	12	11	11	15	15	15	15	4	12	4	2	5	15	13	15	10	12	11	11	13	15	9	11	7	14
Costa Rica	2	1	8	1	3	3	6	3	2	11	4	3	6	10	13	7	10	12	6	7	12	7	8	15	1
Romania	9	12	14	14	12	11	11	1	14	2	13	10	10	12	10	11	15	5	10	14	8	8	1	5	9
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	Ischemic heart disease	Stroke	Low back pain	COPD	Lung cancer	Hypertensive heart disease	Diabetes	Major depressive disorder	Falls	Other cardio & circulatory	Road injury	Lower respiratory infections	Colorectal cancer	Other musculoskeletal	Neck pain	Cirrhosis	Osteoarthritis	Self-harm	Cardiomyopathy	Migraine	Breast cancer	Stomach cancer	Other hearing loss	Chronic kidney disease	Anxiety disorders
Malaysia	10	8	1	14	8	3	9	12	9	8	9	14	7	6	2	3	2	5	8	4	3	3	11	7	7
Argentina	5	4	6	7	9	6	4	9	6	10	5	11	13	14	15	7	3	12	9	1	13	6	8	9	14
Botswana	1	5	7	13	2	13	10	15	1	12	11	8	1	7	13	4	7	3	13	4	1	1	11	6	13
Lebanon	9	3	10	5	7	5	11	10	15	6	4	1	5	3	3	2	1	1	2	3	15	2	4	5	8
Turkey	11	11	12	12	15	8	7	14	7	11	2	5	9	2	1	1	15	7	6	6	7	12	5	2	15
Uruguay	4	6	5	9	10	1	5	5	5	7	3	4	15	13	14	5	4	13	8	2	14	8	13	7	10
Belarus	15	12	13	8	11	2	3	13	12	1	13	3	12	9	9	13	6	14	14	11	11	15	9	4	4
<b>Bulgaria</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>12</b>	<b>15</b>	<b>8</b>	<b>4</b>	<b>13</b>	<b>14</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>5</b>	<b>12</b>	<b>8</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>14</b>	<b>10</b>	<b>11</b>	<b>10</b>	<b>3</b>	<b>3</b>
Mauritius	8	9	2	10	5	11	15	8	4	5	1	6	4	1	4	12	5	6	3	12	5	4	6	15	2
Saint Lucia	3	7	3	2	3	7	13	1	8	13	12	9	2	8	5	6	8	5	7	10	6	7	1	8	9
Venezuela	6	2	8	4	6	9	12	7	3	2	14	7	3	11	6	10	10	9	1	5	3	9	14	14	11
Grenada	7	10	4	1	4	12	14	11	10	15	7	12	8	15	7	11	9	4	12	9	9	5	2	13	5
Kazakhstan	14	15	11	15	13	10	6	2	11	3	15	15	10	10	11	15	14	15	15	13	12	14	7	10	12
Costa Rica	2	1	9	3	1	4	1	6	2	4	6	2	6	12	8	9	12	8	4	7	2	13	15	12	6
Romania	12	13	15	6	14	14	2	3	14	9	10	13	11	4	10	14	13	11	10	15	8	10	12	1	1
Ranking Legend	1 - 3			4 - 7				8 - 11				12 - 15													