

GBD PROFILE: CHINA

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.

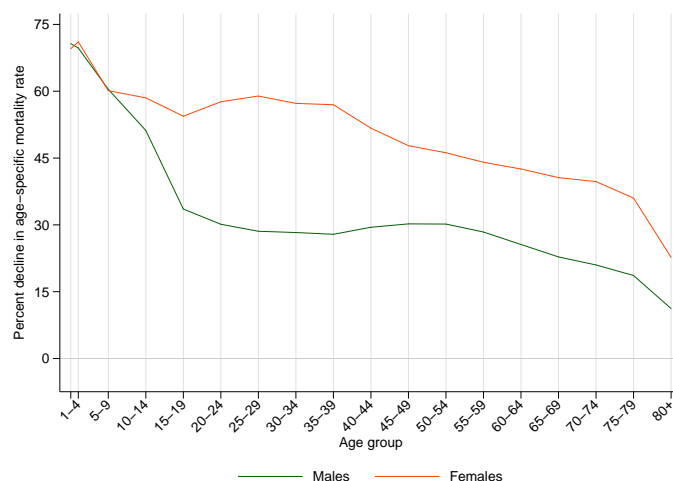
PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in China, cerebrovascular disease, ischemic heart disease, and chronic obstructive pulmonary disease 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 80% from 1990 to 2010.
- The leading risk factor in China is dietary risks.

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 (71%). Males aged 80+ years saw the smallest decrease in mortality rate (11%).

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



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, China

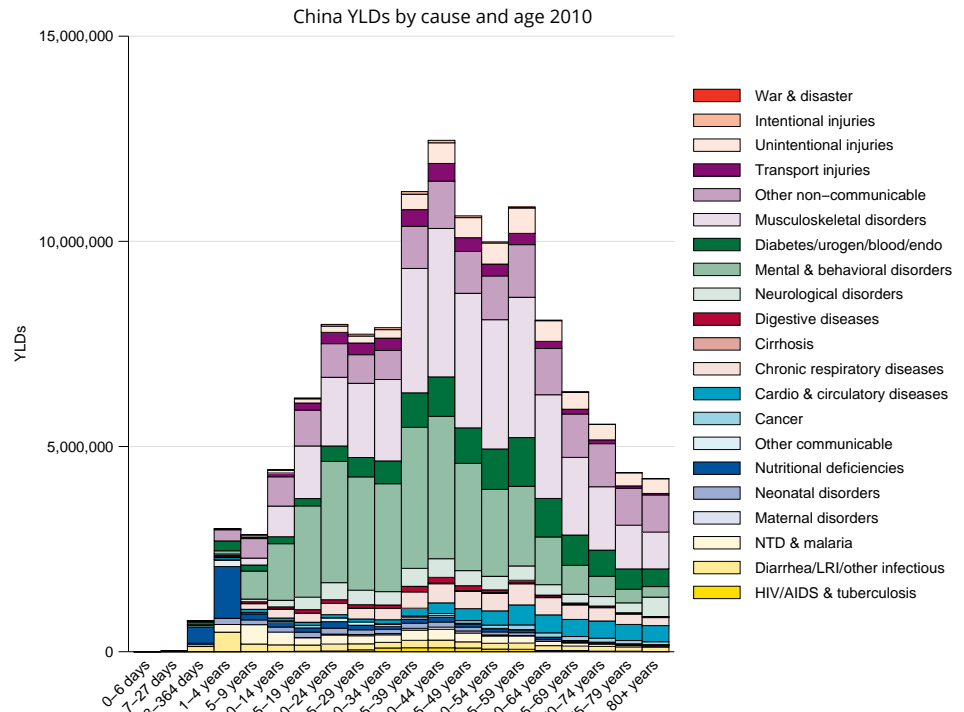
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
24,944 (9.5%)	1 Lower respiratory infections	1 Stroke	29,173 (15.2%)	28
24,344 (9.3%)	2 Stroke	2 Ischemic heart disease	16,084 (8.4%)	86
23,803 (9.1%)	3 COPD	3 COPD	12,995 (6.8%)	-45
10,695 (4.1%)	4 Congenital anomalies	4 Road injury	12,154 (6.3%)	65
10,161 (3.9%)	5 Drowning	5 Lung cancer	11,197 (5.8%)	88
9,436 (3.6%)	6 Neonatal encephalopathy	6 Liver cancer	10,014 (5.2%)	35
8,991 (3.4%)	7 Ischemic heart disease	7 Stomach cancer	6,523 (3.4%)	-12
8,887 (3.4%)	8 Self-harm	8 Self-harm	5,879 (3.1%)	-45
8,376 (3.2%)	9 Preterm birth complications	9 Lower respiratory infections	4,771 (2.5%)	-81
7,795 (3.0%)	10 Road injury	10 Esophageal cancer	3,824 (2.0%)	5
7,372 (2.8%)	11 Stomach cancer	11 Drowning	3,598 (1.9%)	-67
7,331 (2.8%)	12 Liver cancer	12 Congenital anomalies	3,535 (1.8%)	-67
6,254 (2.4%)	13 Lung cancer	13 Colorectal cancer	3,305 (1.7%)	33
5,275 (2.0%)	14 Cirrhosis	14 Diabetes	3,173 (1.7%)	71
5,232 (2.0%)	15 Tuberculosis	15 Falls	3,151 (1.6%)	5
4,697 (1.8%)	16 Diarrheal diseases	16 Cirrhosis	3,180 (1.7%)	-50
3,850 (1.5%)	17 Rheumatic heart disease	17 Hypertensive heart disease	2,734 (1.4%)	23
3,839 (1.5%)	18 Esophageal cancer	18 Leukemia	2,390 (1.2%)	-10
3,133 (1.2%)	19 Falls	19 Preterm birth complications	2,375 (1.2%)	-72
2,756 (1.0%)	20 Leukemia	20 Neonatal encephalopathy	2,302 (1.2%)	-75
2,609 (1.0%)	21 Poisonings	21 Other cardio & circulatory	2,142 (1.1%)	304
2,404 (0.9%)	22 Colorectal cancer	22 Chronic kidney disease	2,053 (1.1%)	33
2,276 (0.9%)	23 Hypertensive heart disease	23 HIV/AIDS	1,643 (0.9%)	> 9,999
1,922 (0.7%)	24 Diabetes	24 Breast cancer	1,563 (0.8%)	69
1,846 (0.7%)	25 Meningitis	25 Poisonings	1,510 (0.8%)	-29
	27 Chronic kidney disease	28 Rheumatic heart disease		
	37 Breast cancer	29 Tuberculosis		
	48 Other cardio & circulatory	49 Meningitis		
	117 HIV/AIDS	60 Diarrheal diseases		

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 China are low back pain, major depressive disorder, neck pain, other musculoskeletal disorders, and diabetes mellitus.

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.

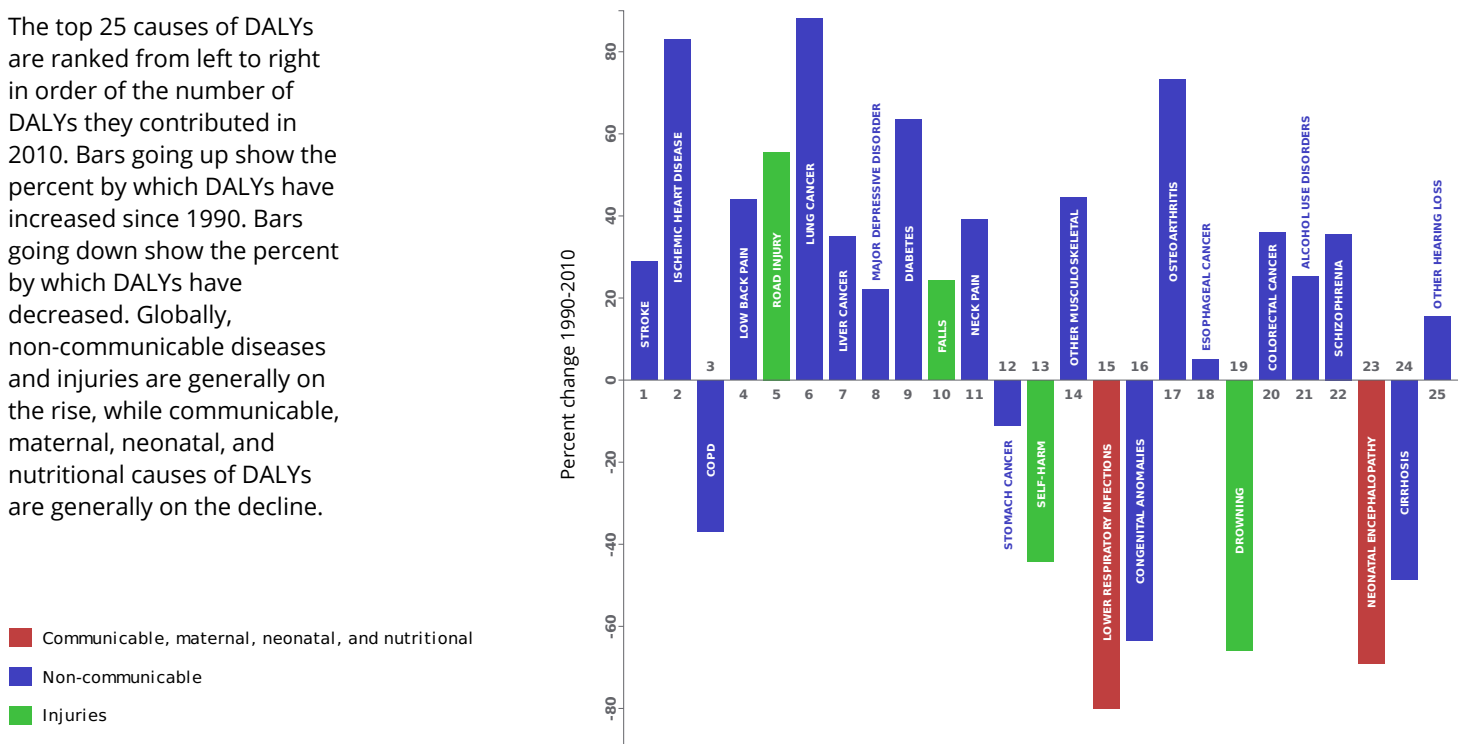


DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In China, the top three causes of DALYs in 2010 were cerebrovascular disease, ischemic heart disease, and chronic obstructive pulmonary disease. The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were trachea, bronchus, and lung cancers, liver cancer, major depressive disorder, diabetes mellitus, and falls.

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 to 2010 for China

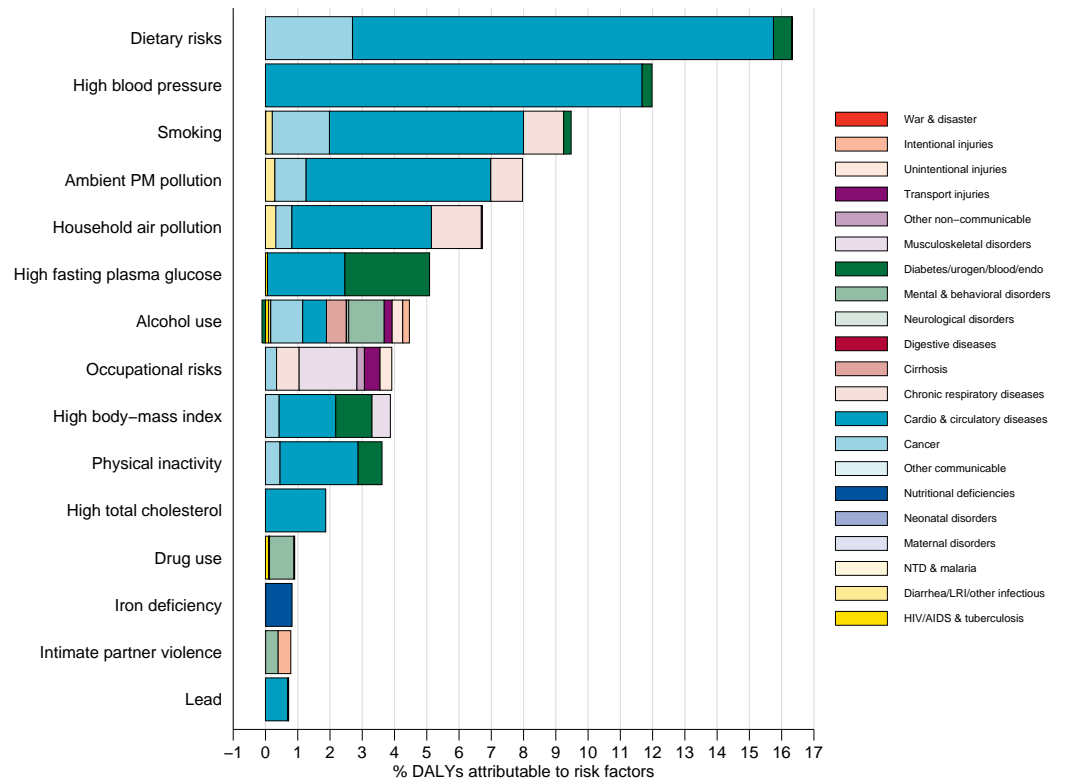


RISK FACTORS

Overall, the three risk factors that account for the most disease burden in China are dietary risks, high blood pressure, 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 occupational risks, respectively, in 2010.

The graph shows the top 15 risk factors for China. 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 China DALYs



COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of China against other comparator countries provides key insight into public health successes and areas where China might be falling behind. The table identifies China'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, China ranked 1st for age-standardized YLL rate and 2nd 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
Algeria	762	2	584	1	23,346	5	15,484	4	12,395	6	12,215	11	70.9	3	75.5	2	60.3	6	64.2	3
El Salvador	809	4	661	5	26,931	8	18,474	6	12,585	10	11,781	7	69.6	7	74.2	5	59.5	8	63.9	5
Albania	666	1	653	4	19,166	1	15,110	3	11,609	3	11,628	5	73.1	1	74.9	4	63	1	64.6	2
Ukraine	913	7	917	11	22,976	4	23,559	10	11,316	2	11,159	2	70	6	69.7	11	60.9	4	60.8	10
Marshall Islands	1,270	14	1,309	15	36,253	12	36,337	14	14,368	15	13,968	15	63.9	12	63.9	14	54	12	54.4	14
Tonga	914	8	882	10	22,822	3	22,195	9	12,546	9	11,940	9	70	5	70.4	10	60.1	7	61	9
Turkmenistan	1,144	12	919	12	39,780	14	24,522	12	11,911	5	11,933	8	62.8	13	69.3	12	54.4	11	60	11
China	896	6	607	2	24,989	7	14,024	1	9,639	1	8,782	1	69.3	8	75.7	1	61.7	2	67.8	1
Namibia	1,259	13	1,298	14	39,681	13	42,112	15	13,774	14	13,809	14	62.4	14	61.6	15	53.2	14	52.5	15
Samoa	1,088	11	863	9	28,245	9	21,441	7	12,397	7	11,587	3	67.2	9	70.8	7	58	9	61.5	7
Egypt	1,065	10	844	8	35,058	10	22,148	8	12,868	12	11,979	10	64.6	10	70.6	8	53.6	13	59.1	12
Guatemala	1,061	9	787	7	36,242	11	24,337	11	12,800	11	11,705	6	64.5	11	70.5	9	55.3	10	61	8
Armenia	809	5	674	6	24,125	6	17,197	5	11,778	4	11,588	4	70.3	4	73.9	6	60.6	5	63.7	6
Jordan	792	3	619	3	21,127	2	14,448	2	12,452	8	12,527	12	71.5	2	75.4	3	60.9	3	64	4
Vanuatu	1,507	15	1,291	13	41,590	15	34,595	13	13,346	13	12,657	13	61.6	15	64.3	13	53	15	55.7	13

COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of China 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 China 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	COPD	Lower respiratory infections	Stroke	Congenital anomalies	Neonatal encephalopathy	Drowning	Low back pain	Ischemic heart disease	Road injury	Self-harm	Preterm birth complications	Major depressive disorder	Stomach cancer	Liver cancer	Lung cancer	Tuberculosis	Diarrheal diseases	Falls	Cirrhosis	Neck pain	Diabetes	Rheumatic heart disease	Other musculoskeletal	Iron-deficiency anemia	Esophageal cancer		
Algeria	1	4	7	15	10	2	11	8	8	2	15	15	3	4	6	7	8	7	2	3	11	4	3	9	1		
El Salvador	3	5	2	8	11	10	3	4	15	11	14	14	9	2	1	4	11	2	7	10	6	3	12	10	6		
Albania	2	12	6	5	1	8	15	7	3	4	1	5	8	10	12	1	3	8	1	13	1	8	5	5	5		
Ukraine	8	1	8	11	6	13	14	14	13	15	2	6	14	1	15	6	1	4	6	14	2	9	10	4	10		
Marshall Islands	11	9	12	3	9	12	4	9	9	13	8	9	6	12	7	13	9	14	11	4	15	11	14	3	11		
Tonga	5	3	3	4	2	5	6	5	5	8	3	3	7	14	5	8	6	12	9	7	12	6	13	7	8		
Turkmenistan	9	15	14	9	15	14	9	15	14	10	11	7	11	5	10	10	12	9	13	11	5	12	7	11	15		
China	15	6	11	10	13	15	2	1	4	12	5	1	15	15	13	9	4	11	8	8	3	13	2	1	13		
Namibia	14	10	10	7	12	7	1	3	2	6	10	11	4	8	11	15	14	1	3	15	10	7	6	14	14		
Samoa	10	7	13	1	5	9	8	6	6	9	4	2	5	6	4	12	5	13	10	6	14	5	15	2	2		
Egypt	12	13	9	13	3	6	13	11	7	1	12	10	1	7	3	5	13	6	15	2	7	15	1	13	3		
Guatemala	4	14	1	6	7	1	10	2	1	7	13	12	12	9	2	11	15	3	12	9	4	2	8	15	9		
Armenia	6	8	4	12	14	4	5	13	12	5	7	8	10	11	14	3	7	10	5	12	8	10	9	6	7		
Jordan	7	2	5	14	4	3	12	12	11	3	9	13	2	3	9	2	2	5	4	1	9	1	4	8	4		
Vanuatu	13	11	15	2	8	11	7	10	10	14	6	4	13	13	8	14	10	15	14	5	13	14	11	12	12		
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																											
Country	Stroke	Ischemic heart disease	COPD	Low back pain	Road injury	Lung cancer	Liver cancer	Major depressive disorder	Diabetes	Falls	Neck pain	Stomach cancer	Self-harm	Other musculoskeletal	Lower respiratory infections	Congenital anomalies	Osteoarthritis	Esophageal cancer	Drowning	Colorectal cancer	Alcohol use disorders	Schizophrenia	Neonatal encephalopathy	Cirrhosis	Other hearing loss		
Algeria	7	7	2	12	6	6	3	14	8	11	3	3	1	3	5	10	10	1	3	2	2	4	10	2	6		
El Salvador	1	6	1	3	15	2	4	11	6	3	10	8	13	11	7	11	7	5	10	4	15	5	4	10	13		
Albania	9	9	4	15	8	13	9	8	1	15	12	10	5	5	8	2	4	7	4	5	4	9	3	1	10		
Ukraine	10	14	6	14	11	12	1	2	2	13	13	12	15	8	3	13	2	10	15	15	14	7	9	12	11		
Marshall Islands	12	10	10	6	5	9	14	12	15	10	4	6	11	15	12	8	13	11	13	14	13	15	11	9	1		
Tonga	3	5	7	9	4	3	13	5	12	5	6	7	8	13	6	6	15	8	5	9	7	13	6	8	2		
Turkmenistan	14	15	12	5	10	10	6	13	5	6	11	11	12	6	11	3	6	15	11	8	8	10	15	13	9		
China	8	2	14	2	14	15	15	1	3	12	8	14	9	2	1	5	1	13	12	11	5	11	8	3	4		
Namibia	11	3	15	1	3	11	7	6	10	2	15	5	6	7	13	9	3	14	7	6	9	2	14	5	14		
Samoa	4	1	9	7	2	1	5	3	13	9	7	4	7	14	10	1	14	2	9	7	6	12	5	6	3		
Egypt	13	13	11	11	12	5	11	9	4	7	2	1	3	1	9	14	11	3	6	1	1	1	1	15	7		
Guatemala	2	4	3	10	1	4	10	10	9	1	9	15	10	10	15	4	5	9	8	3	10	6	7	14	15		
Armenia	6	12	8	4	9	14	8	7	7	4	14	9	4	9	4	12	8	6	2	13	12	8	13	7	12		
Jordan	5	8	5	13	7	8	2	15	11	8	1	2	2	4	2	15	9	4	1	12	3	3	2	4	8		
Vanuatu	15	11	13	8	13	7	12	4	14	14	5	13	14	12	14	7	12	12	14	10	11	14	12	11	5		
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15																	