

GBD PROFILE: MOROCCO

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.

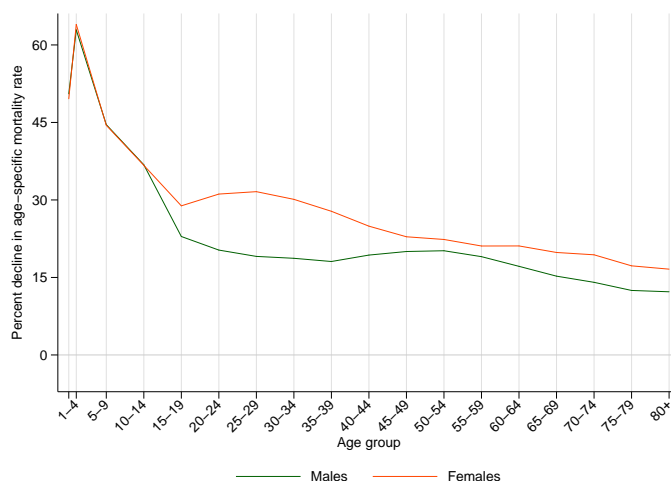
PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Morocco, preterm birth complications, cerebrovascular disease, and ischemic heart disease were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), diarrheal diseases showed the largest decrease, falling by 79% from 1990 to 2010.
- The leading risk factor in Morocco is high body-mass index.

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 (64%). Males aged 80+ years saw the smallest decrease in mortality rate (12%).

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



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, Morocco

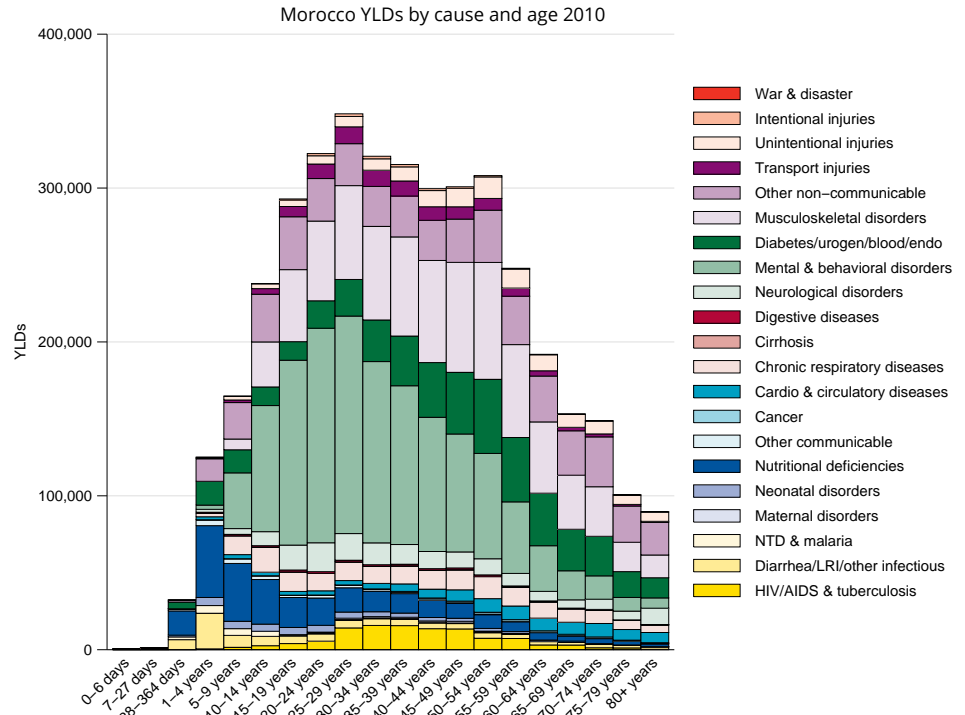
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
872 (11.2%)	1 Lower respiratory infections	1 Preterm birth complications	449 (7.9%)	-33
659 (8.5%)	2 Preterm birth complications	2 Stroke	400 (7.1%)	8
573 (7.4%)	3 Diarrheal diseases	3 Ischemic heart disease	401 (7.1%)	13
371 (4.8%)	4 Stroke	4 Diabetes	363 (6.4%)	58
357 (4.6%)	5 Ischemic heart disease	5 Lower respiratory infections	355 (6.3%)	-60
360 (4.6%)	6 Neonatal encephalopathy	6 Neonatal encephalopathy	227 (4.0%)	-36
317 (4.1%)	7 Protein-energy malnutrition	7 Congenital anomalies	163 (2.9%)	-47
308 (4.0%)	8 Congenital anomalies	8 Other cardio & circulatory	142 (2.5%)	-2
248 (3.2%)	9 Syphilis	9 Neonatal sepsis	156 (2.8%)	-24
230 (3.0%)	10 Diabetes	10 Road injury	132 (2.3%)	8
206 (2.6%)	11 Neonatal sepsis	11 Tuberculosis	115 (2.0%)	-42
196 (2.5%)	12 Tuberculosis	12 Lung cancer	113 (2.0%)	54
191 (2.5%)	13 Meningitis	13 Hypertensive heart disease	103 (1.8%)	22
147 (1.9%)	14 Other cardio & circulatory	14 Drowning	91 (1.6%)	3
134 (1.7%)	15 Maternal disorders	15 Meningitis	89 (1.6%)	-54
123 (1.6%)	16 Road injury	16 Cirrhosis	87 (1.5%)	12
111 (1.4%)	17 Malaria	17 Diarrheal diseases	87 (1.5%)	-85
90 (1.2%)	18 Drowning	18 Syphilis	88 (1.6%)	-65
85 (1.1%)	19 Hypertensive heart disease	19 Cardiomyopathy	84 (1.5%)	9
80 (1.0%)	20 Cirrhosis	20 Protein-energy malnutrition	86 (1.5%)	-73
79 (1.0%)	21 Asthma	21 Asthma	77 (1.4%)	-2
78 (1.0%)	22 Cardiomyopathy	22 Breast cancer	77 (1.4%)	156
73 (0.9%)	23 Lung cancer	23 Chronic kidney disease	71 (1.3%)	141
53 (0.7%)	24 Encephalitis	24 HIV/AIDS	71 (1.2%)	454
52 (0.7%)	25 COPD	25 Leukemia	51 (0.9%)	18
	26 Leukemia	29 COPD		
	33 Breast cancer	33 Maternal disorders		
	34 Chronic kidney disease	41 Encephalitis		
	55 HIV/AIDS	162 Malaria		

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 Morocco are major depressive disorder, low back pain, anxiety disorders, diabetes mellitus, and iron-deficiency anemia.

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.

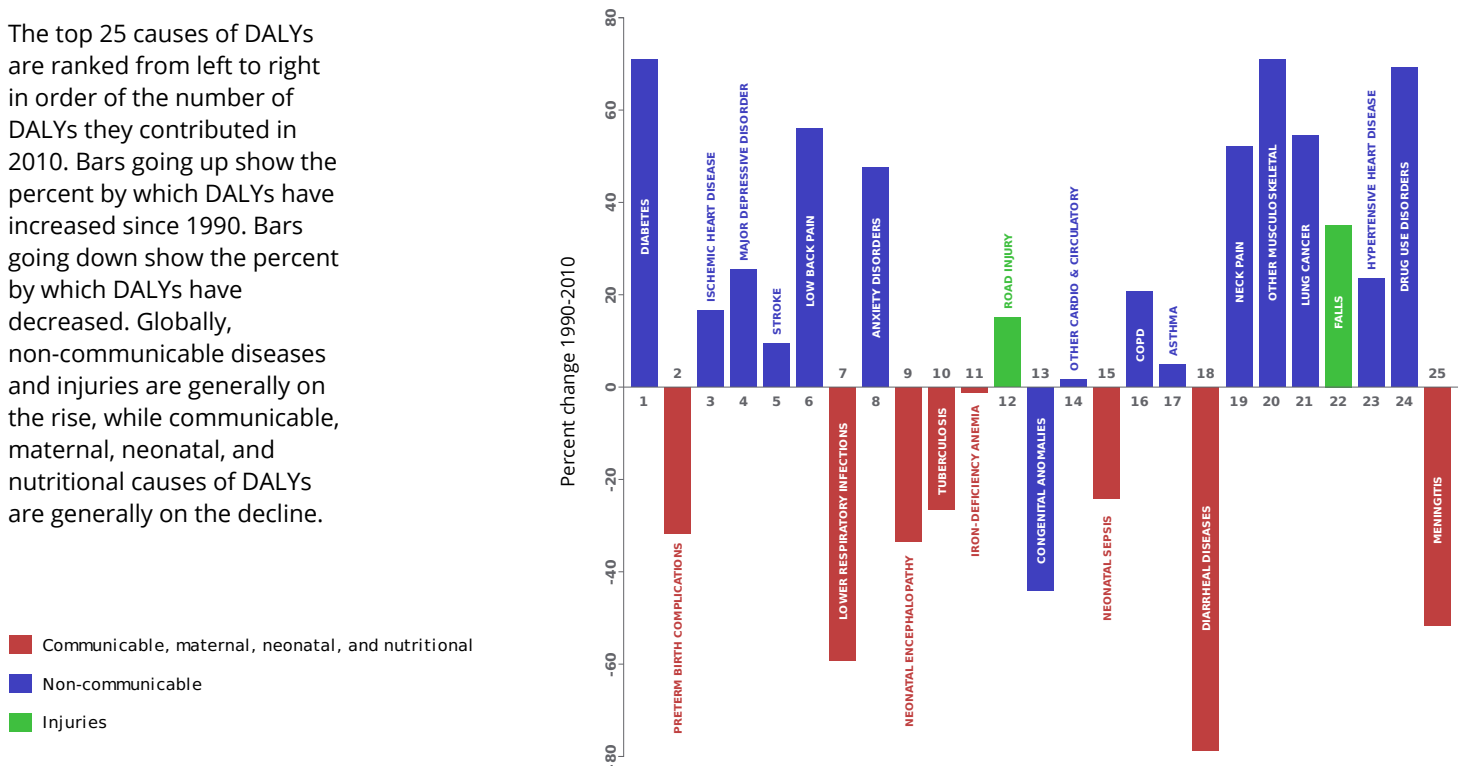


DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Morocco, the top three causes of DALYs in 2010 were diabetes mellitus, preterm birth complications, and ischemic heart disease. The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were low back pain, anxiety disorders, and tuberculosis.

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.

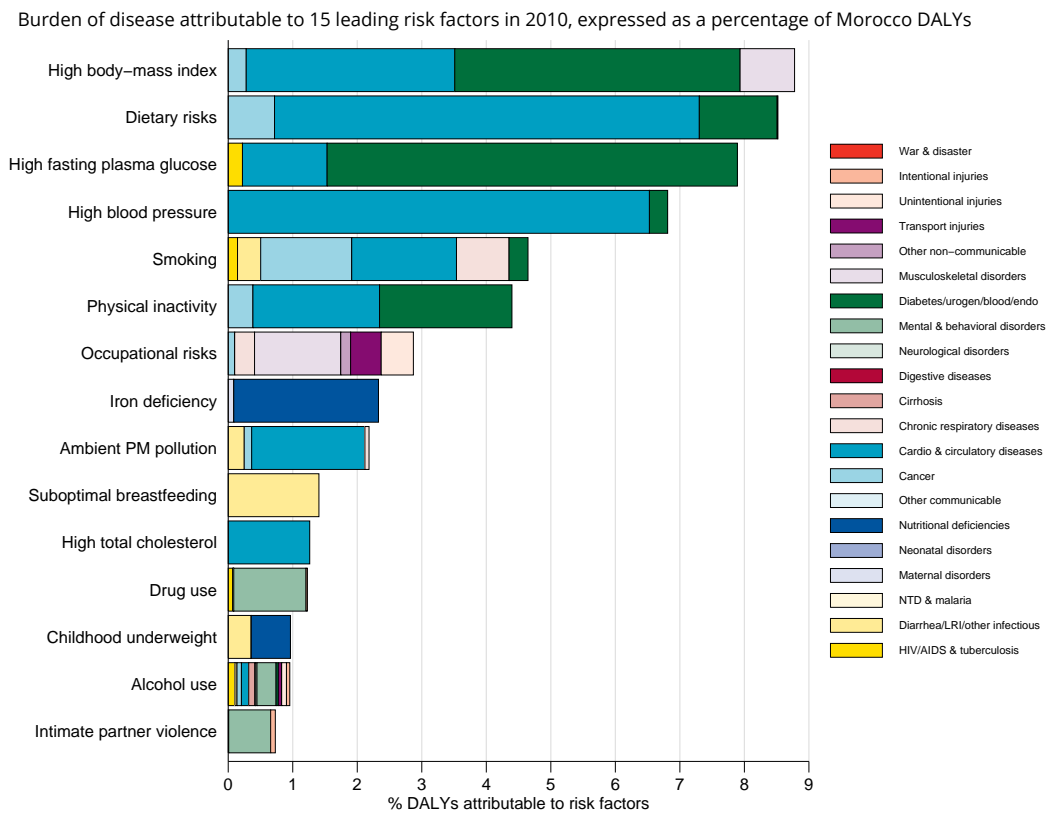
Leading causes of DALYs and percent change 1990 to 2010 for Morocco



RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Morocco are high body-mass index, dietary risks, and high fasting plasma glucose. The leading risk factors for children under 5 and adults aged 15-49 years were suboptimal breastfeeding and dietary risks, respectively, in 2010.

The graph shows the top 15 risk factors for Morocco. 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 Morocco against other comparator countries provides key insight into public health successes and areas where Morocco might be falling behind. The table identifies Morocco'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, Morocco ranked 4th for age-standardized death rate and 12th 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
Georgia	825	6	716	5	24,291	4	19,529	5	11,437	1	11,256	2	70.1	4	72.6	6	60.8	3	63	4
Syria	797	4	513	1	21,457	3	12,094	1	13,133	7	12,031	7	71.4	3	77.6	1	60.3	4	66	1
Bhutan	1,284	12	822	10	49,438	13	26,020	11	13,781	12	12,113	8	58.8	13	69.4	11	50	13	59.7	11
Paraguay	682	1	725	6	18,868	1	18,059	4	12,337	5	12,006	5	73.2	1	73.2	4	62.4	1	62.8	5
Sri Lanka	712	2	620	3	20,846	2	14,898	2	12,231	4	11,452	3	72.3	2	75.5	2	62.1	2	65.3	2
Guyana	1,199	11	1,124	12	35,469	10	31,305	12	13,663	11	14,024	13	64.1	10	66	12	54.6	10	55	13
Bolivia	1,136	10	751	7	41,077	11	23,965	9	13,140	8	12,020	6	62.2	11	70.7	9	53.2	11	60.8	10
Morocco	912	8	696	4	29,826	8	19,672	6	14,217	13	13,384	12	67.4	8	72.7	5	56.3	8	61.1	7
Indonesia	1,033	9	867	11	34,584	9	24,178	10	12,101	2	11,107	1	65	9	69.7	10	56.2	9	60.9	8
Honduras	869	7	784	9	26,454	7	20,507	7	12,940	6	12,485	9	68.9	7	71.8	7	58.8	7	61.6	6
Iraq	809	5	783	8	24,631	5	22,488	8	12,166	3	11,933	4	69.9	5	70.9	8	59.8	5	60.8	9
Federated States of Micronesia	1,476	13	1,258	13	42,732	12	31,526	13	13,632	10	12,681	10	61.1	12	65.6	13	52.3	12	56.7	12
Kiribati	1,879	15	1,528	15	58,098	14	43,508	14	15,513	15	14,585	15	56	14	61	14	47.2	14	51.8	14
Congo	1,696	14	1,401	14	60,756	15	49,063	15	15,443	14	14,357	14	54.7	15	58.8	15	46	15	49.9	15
Cape Verde	785	3	586	2	25,843	6	16,730	3	13,500	9	12,947	11	69.8	6	75.1	3	59.1	6	63.7	3

COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Morocco 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 Morocco 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	Preterm birth complications	Diarrheal diseases	Ischemic heart disease	Neonatal encephalopathy	Stroke	Diabetes	Major depressive disorder	Protein-energy malnutrition	Congenital anomalies	Tuberculosis	Low back pain	Syphilis	Iron-deficiency anemia	Neonatal sepsis	Meningitis	Anxiety disorders	Road injury	Other cardio & circulatory	Maternal disorders	Asthma	COPD	Malaria	Drowning	Hypertensive heart disease
Georgia	9	3	2	14	15	11	1	4	1	6	4	1	3	3	3	5	8	12	1	1	1	2	2	8	6
Syria	2	2	1	15	3	8	4	14	4	15	2	13	5	6	2	2	11	2	14	3	6	7	6	1	9
Bhutan	15	15	13	3	14	1	6	3	13	14	12	15	14	9	13	9	10	9	2	15	13	15	13	13	8
Paraguay	4	7	5	4	4	4	7	11	2	8	1	10	13	1	6	4	12	7	3	5	2	1	1	6	5
Sri Lanka	1	1	3	9	2	2	2	9	6	2	6	2	2	10	1	6	4	1	8	2	7	6	7	10	4
Guyana	7	14	8	13	11	15	12	10	5	9	5	3	4	15	8	3	13	3	12	4	11	3	10	5	15
Bolivia	14	12	15	5	12	5	9	5	10	12	11	6	15	14	9	8	7	14	7	12	4	9	9	12	7
Morocco	8	13	6	6	13	6	13	13	11	10	9	14	12	7	11	10	15	4	15	11	10	4	11	9	14
Indonesia	13	6	9	1	10	12	10	6	8	7	15	7	9	11	12	11	5	13	10	10	3	8	14	3	12
Honduras	3	10	11	11	7	3	5	15	7	1	7	5	6	8	4	1	6	8	4	6	12	10	8	7	10
Iraq	5	4	4	12	5	7	11	1	3	13	3	12	1	5	14	7	2	5	13	9	5	5	3	2	13
Federated States of Micronesia	10	8	7	8	6	13	14	2	12	5	10	8	8	4	5	13	3	10	9	8	14	12	4	14	3
Kiribati	12	9	14	10	9	14	15	8	14	4	14	9	10	2	7	15	9	11	11	13	15	13	5	15	1
Congo	11	11	12	7	8	10	8	12	15	11	13	4	11	12	10	14	14	15	6	14	8	14	15	11	11
Cape Verde	6	5	10	2	1	9	3	7	9	3	8	11	7	13	15	12	1	6	5	7	9	11	12	4	2
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	Diabetes	Preterm birth complications	Ischemic heart disease	Major depressive disorder	Stroke	Low back pain	Lower respiratory infections	Anxiety disorders	Neonatal encephalopathy	Tuberculosis	Iron-deficiency anemia	Road injury	Congenital anomalies	Other cardio & circulatory	Neonatal sepsis	COPD	Asthma	Diarrheal diseases	Neck pain	Other musculoskeletal	Lung cancer	Falls	Hypertensive heart disease	Drug use disorders	Meningitis
Georgia	1	4	15	6	10	1	3	10	15	6	7	5	7	15	4	7	1	1	13	8	13	8	10	11	3
Syria	2	3	14	14	5	13	1	8	4	1	5	1	10	12	2	4	2	2	3	5	1	4	3	10	1
Bhutan	5	15	3	1	1	15	12	5	14	11	6	6	11	1	12	15	8	9	4	1	6	14	8	6	7
Paraguay	9	7	6	12	8	10	5	7	5	3	4	11	9	2	7	3	3	5	12	12	11	2	9	9	5
Sri Lanka	8	1	9	5	2	2	2	6	1	2	10	2	4	3	1	9	12	3	5	2	2	10	2	4	8
Guyana	13	12	13	10	13	3	9	14	9	8	15	12	12	11	9	1	11	10	10	7	5	15	15	7	6
Bolivia	6	11	4	2	3	5	14	9	12	10	13	13	13	6	10	6	4	14	11	10	7	3	6	13	9
Morocco	12	14	5	13	6	14	8	15	11	9	8	3	8	13	11	2	9	4	1	6	15	5	11	12	10
Indonesia	10	10	2	7	14	7	7	4	13	15	11	14	5	9	8	10	5	13	6	3	14	6	12	3	4
Honduras	3	9	11	15	4	6	4	11	6	5	1	8	1	4	5	8	13	12	9	13	4	1	7	5	2
Iraq	11	8	12	4	9	12	10	2	7	4	9	4	14	14	15	5	6	6	2	4	9	7	14	8	11
Federated States of Micronesia	14	2	10	3	12	11	11	3	2	12	3	7	3	8	3	11	14	7	8	14	10	11	5	14	13
Kiribati	15	6	7	9	15	9	13	13	8	13	2	10	6	10	6	13	15	11	7	15	12	13	4	15	14
Congo	7	13	8	11	11	4	15	12	10	14	12	15	15	7	13	14	10	15	14	11	8	12	13	2	15
Cape Verde	4	5	1	8	7	8	6	1	3	7	14	9	2	5	14	12	7	8	15	9	3	9	1	1	12
Ranking Legend	1 - 3			4 - 7				8 - 11				12 - 15													