

# GBD PROFILE: LAOS

## 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.

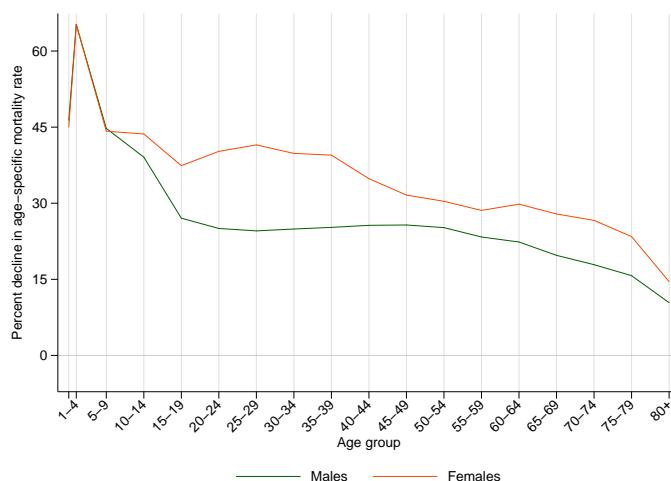
### PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Laos, lower respiratory infections, ischemic heart disease, and diarrheal diseases 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 69% from 1990 to 2010.
- The leading risk factor in Laos 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 males aged 1-4 years (65%). Males aged 80+ years saw the smallest decrease in mortality rate (10%).

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



### 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, Laos

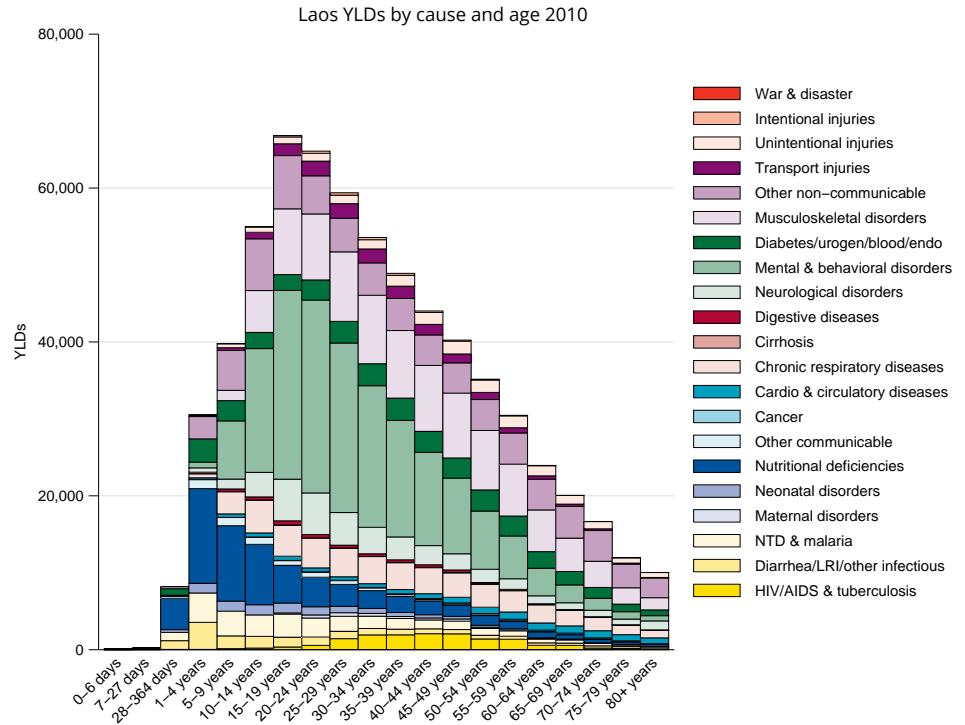
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
511 (17.5%)	1 Lower respiratory infections	1 Lower respiratory infections	223 (11.9%)	-56
377 (12.8%)	2 Diarrheal diseases	2 Ischemic heart disease	108 (5.8%)	33
141 (4.9%)	3 Congenital anomalies	3 Diarrheal diseases	114 (6.0%)	-70
127 (4.4%)	4 Preterm birth complications	4 Congenital anomalies	102 (5.4%)	-28
113 (3.8%)	5 Tetanus	5 Stroke	97 (5.2%)	37
104 (3.5%)	6 Tuberculosis	6 Preterm birth complications	93 (4.9%)	-27
118 (4.0%)	7 Measles	7 Tuberculosis	72 (3.8%)	-29
112 (3.7%)	8 Malaria	8 Road injury	56 (3.0%)	90
87 (3.0%)	9 Protein-energy malnutrition	9 Neonatal encephalopathy	51 (2.7%)	-21
81 (2.8%)	10 Ischemic heart disease	10 Meningitis	30 (1.6%)	-52
72 (2.5%)	11 Stroke	11 Asthma	31 (1.6%)	-19
64 (2.2%)	12 Meningitis	12 Self-harm	29 (1.5%)	36
63 (2.2%)	13 Neonatal encephalopathy	13 Interpersonal violence	28 (1.5%)	63
46 (1.6%)	14 Maternal disorders	14 Cirrhosis	26 (1.4%)	30
39 (1.3%)	15 Asthma	15 Drowning	26 (1.4%)	-17
47 (1.6%)	16 Mechanical forces	16 COPD	25 (1.3%)	-25
33 (1.1%)	17 COPD	17 Protein-energy malnutrition	26 (1.4%)	-70
45 (1.5%)	18 Rabies	18 Diabetes	24 (1.3%)	74
32 (1.1%)	19 Drowning	19 Maternal disorders	23 (1.2%)	-52
31 (1.1%)	20 Road injury	20 Dengue	81 (4.0%)	3,416
27 (0.9%)	21 Rheumatic heart disease	21 Mechanical forces	25 (1.3%)	-45
82 (2.7%)	22 Whooping cough	22 Other cardio & circulatory	20 (1.1%)	-2
22 (0.7%)	23 Other cardio & circulatory	23 Chronic kidney disease	21 (1.1%)	51
22 (0.7%)	24 Self-harm	24 Rheumatic heart disease	19 (1.0%)	-29
20 (0.7%)	25 Cirrhosis	25 Malaria	33 (1.7%)	-71
	27 Interpersonal violence	28 Rabies		
	29 Diabetes	30 Tetanus		
	30 Chronic kidney disease	33 Whooping cough		
	69 Dengue	46 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 Laos are major depressive disorder, iron-deficiency anemia, low back pain, chronic obstructive pulmonary disease, 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.

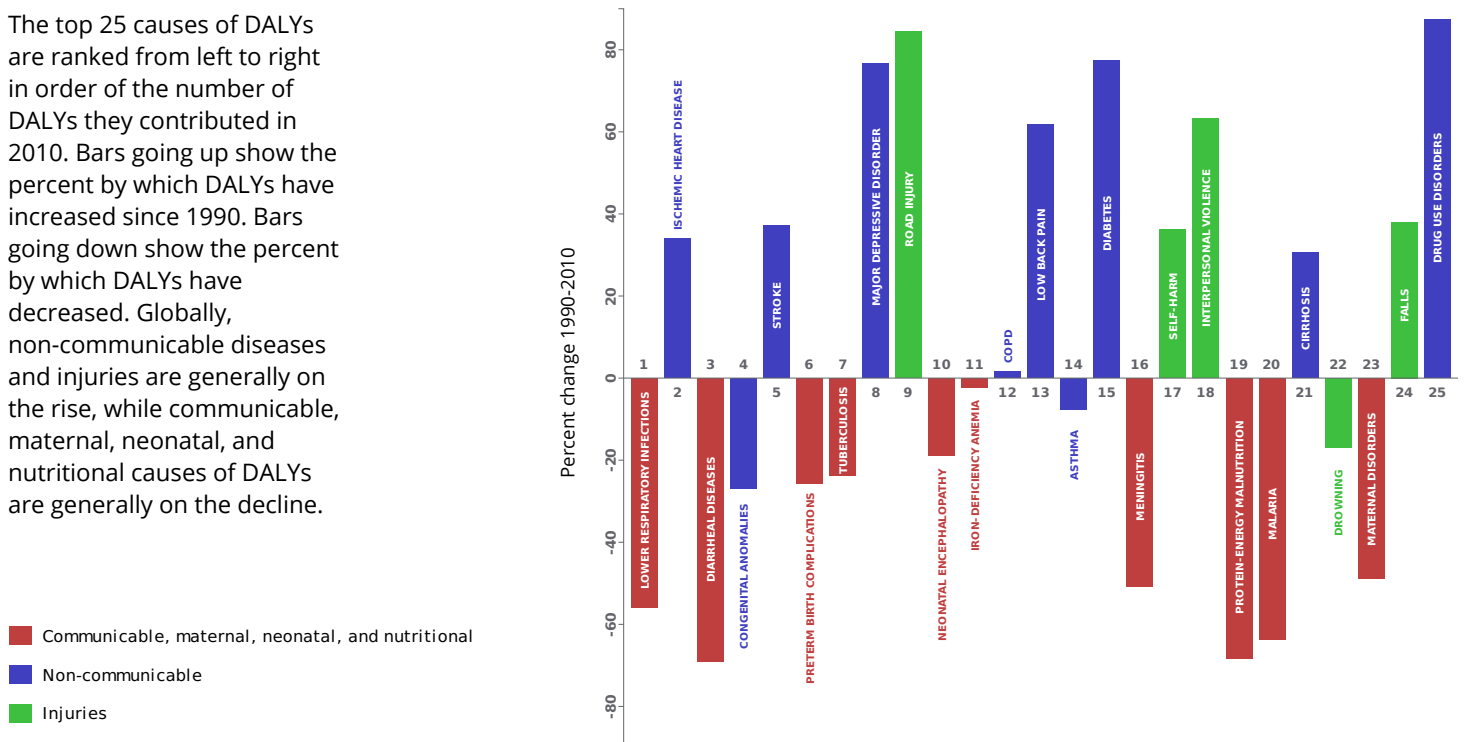


## DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Laos, the top three causes of DALYs in 2010 were lower respiratory infections, ischemic heart disease, and diarrheal diseases. The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were cerebrovascular disease, major depressive disorder, road injury, and neonatal encephalopathy (birth asphyxia and birth trauma).

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.

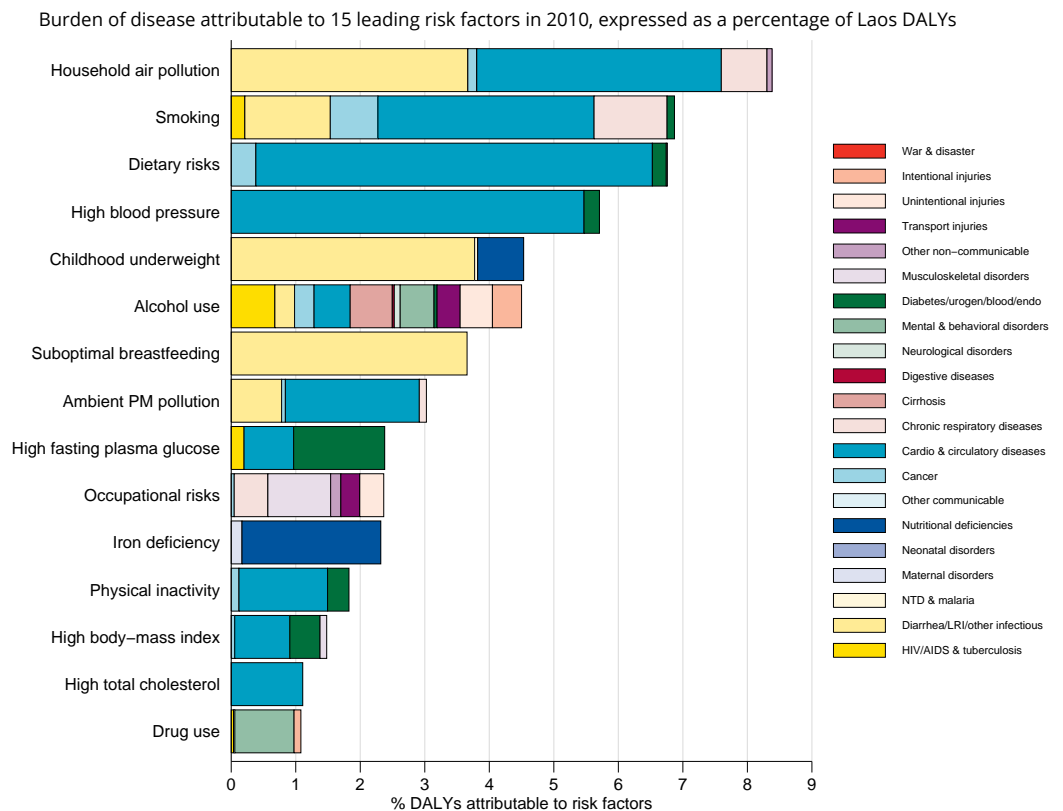
Leading causes of DALYs and percent change 1990 to 2010 for Laos



## RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Laos 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 alcohol use, respectively, in 2010.

The graph shows the top 15 risk factors for Laos. 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 Laos against other comparator countries provides key insight into public health successes and areas where Laos might be falling behind. The table identifies Laos' 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, Laos ranked 3rd for age-standardized YLD rate and 10th 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
Palestine	794	1	694	1	23,225	1	18,413	1	12,827	4	12,639	8	70.6	1	73.2	1	59.9	1	62.2	1
Pakistan	1,120	6	982	6	41,231	5	33,518	8	12,877	5	12,323	4	62.3	5	65.7	8	53.3	5	56.5	7
Yemen	1,361	12	1,068	9	47,661	9	32,041	7	15,157	13	14,318	14	59.3	10	65.8	7	49.4	11	55.2	9
Uzbekistan	972	2	911	4	29,477	2	26,063	2	12,381	2	12,150	1	67.3	2	68.8	2	57.8	2	59.3	2
Solomon Islands	1,707	14	1,510	14	47,851	11	40,489	12	13,520	8	12,482	6	59.4	9	62	12	51.2	8	54	11
Papua New Guinea	1,990	15	1,700	15	64,195	15	49,553	15	14,891	12	13,793	9	53.8	15	58.7	15	45.7	15	50.4	13
Djibouti	1,180	7	1,129	11	45,440	7	38,655	11	13,493	7	14,182	12	60.6	7	63.2	11	51.6	6	53.5	12
<b>Laos</b>	<b>1,532</b>	<b>13</b>	<b>1,094</b>	<b>10</b>	<b>56,031</b>	<b>13</b>	<b>34,746</b>	<b>9</b>	<b>13,297</b>	<b>6</b>	<b>12,323</b>	<b>3</b>	<b>56.2</b>	<b>13</b>	<b>64.7</b>	<b>9</b>	<b>48.3</b>	<b>13</b>	<b>55.9</b>	<b>8</b>
Kyrgyzstan	1,047	3	999	7	33,446	3	30,037	6	12,606	3	12,336	5	65.5	3	66.9	6	56.2	3	57.6	5
Sudan	1,110	5	799	2	41,735	6	28,295	4	15,584	15	14,781	15	62.1	6	68.8	3	51.4	7	57	6
Cameroon	1,296	9	1,277	13	51,072	12	49,262	13	14,617	11	13,891	11	58.3	12	59.1	14	49.1	12	50.2	15
Nigeria	1,343	10	1,159	12	60,604	14	49,276	14	14,273	9	13,842	10	55.1	14	59.6	13	46.4	14	50.4	14
Mauritania	1,244	8	1,031	8	45,799	8	36,003	10	15,248	14	14,307	13	60.2	8	64.5	10	50.3	9	54.3	10
Cambodia	1,355	11	957	5	47,844	10	28,770	5	14,501	10	12,603	7	59.2	11	67.5	5	50.1	10	58	4
Tajikistan	1,067	4	911	3	38,138	4	27,409	3	12,331	1	12,296	2	63.8	4	68.3	4	54.8	4	58.7	3

## COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Laos 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 Laos 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	Congenital anomalies	Preterm birth complications	Tuberculosis	Tetanus	Malaria	Measles	Protein-energy malnutrition	Ischemic heart disease	Stroke	Neonatal encephalopathy	Meningitis	Iron-deficiency anemia	COPD	Maternal disorders	Asthma	Major depressive disorder	Road injury	Mechanical forces	Rabies	Low back pain	Drowning	Rheumatic heart disease	Other cardio & circulatory
Palestine	1	1	13	15	1	4	1	3	3	8	14	4	1	1	1	2	4	15	3	2	3	13	1	7	10
Pakistan	3	9	11	14	11	14	5	8	5	7	1	15	5	8	15	5	7	2	1	14	12	1	7	5	4
Yemen	14	14	15	5	8	10	7	6	6	12	8	1	4	10	4	9	10	14	7	13	10	12	5	14	13
Uzbekistan	4	2	5	1	4	1	2	1	2	15	10	14	3	6	2	1	3	6	9	8	1	5	10	10	1
Solomon Islands	2	4	1	2	12	8	10	5	8	9	15	2	9	2	12	6	14	3	5	7	4	8	9	12	11
Papua New Guinea	15	5	6	3	15	11	13	7	11	5	2	3	12	5	11	14	15	4	6	10	9	6	12	11	12
Djibouti	10	7	9	11	5	6	6	12	14	6	7	10	13	7	8	12	6	9	15	6	14	11	11	3	9
<b>Laos</b>	<b>12</b>	<b>12</b>	<b>14</b>	<b>9</b>	<b>14</b>	<b>15</b>	<b>9</b>	<b>10</b>	<b>9</b>	<b>11</b>	<b>12</b>	<b>5</b>	<b>8</b>	<b>9</b>	<b>13</b>	<b>10</b>	<b>13</b>	<b>8</b>	<b>4</b>	<b>15</b>	<b>15</b>	<b>3</b>	<b>14</b>	<b>15</b>	<b>15</b>
Kyrgyzstan	8	3	10	4	3	2	3	2	1	13	13	13	2	3	14	3	1	7	11	9	2	4	15	9	2
Sudan	5	8	7	6	7	5	11	9	13	2	4	8	10	12	5	11	5	13	10	4	7	15	6	4	8
Cameroon	6	11	4	7	6	7	14	13	12	4	5	7	14	11	9	13	8	11	14	1	6	10	3	2	6
Nigeria	11	15	3	12	10	12	15	15	15	1	3	12	15	14	3	8	9	1	13	3	8	14	4	1	5
Mauritania	7	13	2	8	9	9	8	14	10	3	6	9	11	15	7	15	11	12	12	5	11	9	2	6	7
Cambodia	9	6	12	10	13	13	12	11	7	10	11	6	7	13	10	7	12	10	2	11	13	2	8	13	14
Tajikistan	13	10	8	13	2	3	4	4	4	14	9	11	6	4	6	4	2	5	8	12	5	7	13	8	3
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	Lower respiratory infections	Ischemic heart disease	Diarrheal diseases	Congenital anomalies	Stroke	Preterm birth complications	Tuberculosis	Major depressive disorder	Road injury	Neonatal encephalopathy	Iron-deficiency anemia	COPD	Low back pain	Asthma	Diabetes	Meningitis	Self-harm	Interpersonal violence	Protein-energy malnutrition	Malaria	Cirrhosis	Drowning	Maternal disorders	Falls	Drug use disorders
Palestine	1	8	1	9	12	14	1	15	3	3	2	1	13	4	12	1	4	15	3	1	2	1	2	5	10
Pakistan	6	7	11	12	4	15	12	5	1	15	7	15	1	6	10	8	10	8	5	5	9	7	6	13	5
Yemen	15	12	13	15	8	12	7	14	7	1	13	5	12	10	13	4	3	1	8	8	3	3	9	6	7
Uzbekistan	9	15	2	5	11	1	2	10	8	14	6	3	6	3	9	2	11	3	2	2	13	13	1	7	14
Solomon Islands	2	9	6	1	15	2	13	1	4	2	1	12	9	14	15	9	14	10	9	9	10	9	7	10	12
Papua New Guinea	14	6	7	6	3	3	15	8	5	4	4	13	10	15	14	11	13	9	10	11	14	8	11	12	9
Djibouti	7	3	9	8	7	5	10	12	14	8	12	8	11	9	7	12	8	11	14	10	5	14	12	3	11
<b>Laos</b>	<b>10</b>	<b>10</b>	<b>8</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>14</b>	<b>11</b>	<b>9</b>	<b>5</b>	<b>8</b>	<b>11</b>	<b>3</b>	<b>13</b>	<b>6</b>	<b>7</b>	<b>12</b>	<b>12</b>	<b>7</b>	<b>6</b>	<b>6</b>	<b>11</b>	<b>8</b>	<b>8</b>	<b>13</b>
Kyrgyzstan	5	14	3	10	14	8	4	4	10	13	3	14	5	1	1	3	15	13	1	3	15	15	4	9	15
Sudan	3	1	10	2	1	4	5	13	11	7	11	4	15	8	2	10	7	2	12	12	1	6	10	1	8
Cameroon	13	5	15	7	5	6	6	3	13	9	9	7	8	5	11	15	5	4	13	14	12	4	14	14	3
Nigeria	12	2	12	3	2	13	9	2	15	12	14	2	14	7	4	14	2	14	15	15	8	5	13	15	1
Mauritania	11	4	14	4	6	10	8	7	12	10	15	6	7	11	8	13	1	6	11	13	7	2	15	11	2
Cambodia	4	11	4	11	9	11	11	6	6	6	10	10	2	12	3	5	9	7	6	7	4	10	5	2	4
Tajikistan	8	13	5	13	13	7	3	9	2	11	5	9	4	2	5	6	6	5	4	4	11	12	3	4	6
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15															