

## Statistical Annex

# DISASTER RISK INDEX TABLES

TABLE 1 DISASTER RISK INDEX SUMMARY TABLE, 1980 - 2000

	Number of people killed per year	Average number of people killed per million inhabitants	Average HDI 1980-2000	Gross Domestic Product Purchasing Power Parity, 1990	Percentage of population infected by HIV/AIDS virus, 2001	Control of corruption 2002	Average percentage of people affected by conflicts per year, 1980 - 2000
Country Name (alphabetical order)	Killed per Year	Killed per million	HDI <sub>av</sub> *	GDPcap (ppp)	%	Corruption	%population
Afghanistan	820.00	49.06	--	--	--	-1.35	98
Albania	0.76	0.25	0.725	2 843	--	-0.85	0
Algeria	150.71	6.02	0.693	4 502	0.04	-0.70	37
Angola	1.38	0.13	0.422	1 581	2.59	-1.12	79
Antigua and Barbuda	0.33	5.26	--	7 270	--	-0.84	0
Argentina	12.57	0.38	0.842	7 721	0.37	-0.77	0
Armenia	1 190.67	323.68	0.745	3 565	0.06	-0.72	0
Australia	9.95	0.59	0.936	17 271	0.06	1.91	0
Austria	1.48	0.19	0.921	18 664	0.12	1.85	0
Azerbaijan	2.29	0.29	0.738	4591	0.02	-1.07	0.8
Bahamas	0.24	0.89	0.82	14 521	2.29	1.41	0
Bahrain	--	--	0.824	12 088	--	0.95	0
Bangladesh	7 930.95	68.84	0.47	1 004	0.01	-1.12	4
Barbados	0.00	0.00	0.864	11 252	--	1.29	0
Belarus	0.33	0.03	0.782	7 031	0.15	-0.78	0
Belgium	0.43	0.04	0.935	19 411	0.08	1.57	0
Belize	0.67	3.21	0.776	3 633	1.23	-0.25	0
Benin	4.67	0.94	0.42	706	1.94	-0.61	0
Bhutan	10.57	5.44	0.477	882	--	0.91	0
Bolivia	20.43	3.12	0.648	1 826	0.05	-0.82	0
Bosnia and Herzegovina	0.00	0.00	--	--	--	-0.60	27
Botswana	1.48	1.26	0.577	4 911	20.91	0.76	0
Brazil	106.00	0.72	0.75	5 562	0.35	-0.05	0
Brunei Darussalam	--	--	0.857	14 727	--	0.32	0
Bulgaria	0.19	0.02	0.772	5 797	--	-0.17	0
Burkina Faso	2.10	0.24	0.32	636	4.26	-0.04	0
Burundi	0.86	0.14	0.309	722	6.00	-1.02	16
Cambodia	48.52	4.24	0.541	980	1.30	-0.90	75
Cameroon	1.76	0.13	0.506	1 561	6.05	-1.10	0
Canada	5.10	0.18	0.936	20 122	0.18	2.03	0
Cape Verde	1.52	4.92	0.708	2 926	--	0.33	0
Central African Republic	0.33	0.11	0.372	1 060	6.61	-1.02	3.6

TABLE 1 DISASTER RISK INDEX SUMMARY TABLE, 1980 - 2000

	Number of people killed per year	Average number of people killed per million inhabitants	Average HDI 1980-2000	Gross Domestic Product Purchasing Power Parity, 1990	Percentage of population infected by HIV/AIDS virus, 2001	Control of corruption 2002	Average percentage of people affected by conflicts per year, 1980 - 2000
Country Name (alphabetical order)	Killed per Year	Killed per million	HDI <sub>av</sub> *	GDPcap (ppp)	%	Corruption	%population
Chad	147.38	25.89	0.359	766	1.82	-1.02	43
Chile	32.95	2.47	0.825	4 981	0.11	1.55	0
China	2 173.10	1.88	0.718	1 394	0.09	-0.41	0
Colombia	134.43	3.76	0.765	7 195	0.33	-0.47	100
Comoros	2.81	6.15	0.51	1 716	--	-0.73	0
Congo	0.10	0.04	0.502	760	3.60	-0.94	6
Costa Rica	8.48	2.61	0.821	5 288	0.27	0.88	0
Cote d'Ivoire	1.33	0.11	0.426	1 552	4.74	-0.86	0
Croatia	0.00	0.00	0.803	7 133	0.00	0.23	4
Cuba	7.24	0.68	--	--	0.03	-0.13	0
Cyprus	0.10	0.13	0.877	12 784	--	0.89	0
Czech Republic	1.38	0.13	0.844	--	0.00	0.38	0
Democratic People's Republic of Korea	12 887.76	605.90	--	--	--	-1.18	0
Democratic Republic of the Congo	3.05	0.07	0.429	1 290	2.53	-1.42	18
Denmark	0.86	0.17	0.921	19 513	0.09	2.26	0
Djibouti	8.57	17.66	0.447	--	--	-0.73	23.4
Dominica	0.14	1.99	--	--	--	0.52	0
Dominican Republic	22.19	3.11	0.722	3 361	1.47	-0.39	0
Ecuador	58.95	5.59	0.726	2 781	0.16	-1.02	0
Egypt	58.43	0.98	0.635	2 509	0.01	-0.29	0
El Salvador	103.52	19.01	0.701	2 969	0.38	-0.54	44
Equatorial Guinea	--	--	--	1 052	1.26	-1.89	0
Eritrea	0.00	0.00	0.416	--	1.44	0.04	70
Estonia	--	--	--	7 957	0.56	0.66	0
Ethiopia	14 330.33	272.57	0.321	486	3.26	-0.35	24
Fiji	7.29	10.08	0.757	3 804	0.04	0.12	0
Finland	0.00	0.00	0.925	17 797	0.02	2.39	0
France	15.86	0.28	0.924	17 966	0.17	1.45	0
Gabon	0.00	0.00	0.617	5 241	--	-0.55	0
Gambia	2.52	2.98	0.398	1 488	0.61	-0.83	0
Georgia	18.10	3.38	0.742	9 101	0.02	-1.03	0
Germany	2.52	0.03	0.921	18 224	0.05	1.82	0
Ghana	9.95	0.65	0.542	1 368	1.65	-0.40	0
Greece	14.76	1.44	0.881	11 464	0.08	0.58	0
Grenada	0.00	0.00	--	4 567	--	0.71	0
Guatemala	58.24	6.34	0.626	2 824	0.58	-0.71	76
Guinea	13.86	2.27	0.397	1 520	--	-0.58	3
Guinea-Bissau	0.05	0.06	0.339	686	1.39	-0.61	0
Guyana	0.00	0.00	0.704	2 858	2.29	-0.50	0
Haiti	93.14	13.72	0.467	1 638	3.51	-1.70	0
Honduras	732.90	143.61	0.634	2 074	0.87	-0.78	0
Hungary	2.52	0.25	0.829	9 447	0.03	0.60	0
Iceland	0.00	0.00	0.932	21 343	0.08	2.19	0
India	2 931.81	3.51	0.571	1 400	0.39	-0.25	3
Indonesia	373.90	2.06	0.677	1 952	0.05	-1.16	1
Iran (Islamic Republic of)	2 393.14	40.29	0.714	3 878	0.03	-0.38	22
Iraq	0.95	0.05	--	--	0.00	-1.43	71
Ireland	1.81	0.51	0.916	12 687	0.06	1.67	0
Israel	0.90	0.17	0.893	13 450	--	1.08	99
Italy	242.86	4.27	0.909	17 438	0.19	0.80	0
Jamaica	6.57	2.81	0.738	3 261	0.67	-0.46	0
Japan	351.29	2.87	0.928	20 183	0.01	1.20	0

TABLE 1 DISASTER RISK INDEX SUMMARY TABLE, 1980 - 2000

	Number of people killed per year	Average number of people killed per million inhabitants	Average HDI 1980-2000	Gross Domestic Product Purchasing Power Parity, 1990	Percentage of population infected by HIV/AIDS virus, 2001	Control of corruption 2002	Average percentage of people affected by conflicts per year, 1980 - 2000
Country Name (alphabetical order)	Killed per Year	Killed per million	HDI <sub>av</sub> *	GDPcap (ppp)	%	Corruption	%population
Jordan	1.33	0.35	0.714	3 304	--	0.00	0
Kazakhstan	5.86	0.35	0.742	6 095	0.04	-1.05	0
Kenya	19.29	0.78	0.514	977	7.99	-1.05	0
Kiribati	0.00	0.00	--	--	--	-0.44	0
Kuwait	0.10	0.06	0.818	--	--	1.06	0
Kyrgyzstan	2.86	0.62	0.707	3 608	0.01	-0.84	0
Lao People's Democratic Republic	5.95	1.36	0.476	900	0.03	-1.25	6
Latvia	--	--	--	8 487	--	0.09	0
Lebanon	1.19	0.44	0.758	1 870	--	-0.34	25
Lesotho	1.90	1.13	0.541	1 087	17.25	-0.28	0
Liberia	0.48	0.22	--	--	--	-0.98	28
Libyan Arab Jamahiriya	0.00	0.00	0.77	--	0.13	-0.82	0
Liechtenstein	--	--	--	--	--	1.29	0
Lithuania	0.29	0.08	0.803	8 534	0.04	0.25	0
Luxembourg	0.00	0.00	0.924	21 363	--	2.00	0
Madagascar	58.33	4.65	0.462	818	0.13	0.14	0
Malawi	23.76	2.43	0.397	445	7.86	-0.91	0
Malaysia	17.29	0.89	0.774	4 739	0.19	0.38	0
Maldives	0.00	0.00	0.739	3 611	--	0.04	0
Mali	1.81	0.20	0.378	582	0.95	-0.32	0
Malta	--	--	0.866	8 742	--	0.80	0
Marshall Islands	0.00	0.00	--	--	--	-0.02	0
Mauritania	107.05	52.63	0.437	1 167	--	0.23	0
Mauritius	0.33	0.31	0.765	5 597	0.06	0.53	0
Mexico	629.19	7.26	0.79	6 383	0.13	-0.19	0
Micronesia (Federated States of)	0.24	2.33	--	--	--	-0.44	0
Moldova, Republic of	3.05	0.71	0.699	5 216	0.13	-0.89	0
Mongolia	4.81	2.00	0.569	1 804	--	-0.14	0
Morocco	40.29	1.48	0.596	2 888	0.04	-0.04	0
Mozambique	4 827.71	327.51	0.323	521	6.33	-1.01	46
Myanmar	10.90	0.25	0.551	--	0.62	-1.37	74
Namibia	0.00	0.00	0.601	4 411	10.63	0.21	40
Nepal	242.52	13.58	0.48	883	0.24	-0.30	0
Netherlands	0.10	0.01	0.931	17 407	0.10	2.15	0
New Zealand	0.81	0.24	0.913	14 190	0.03	2.28	0
Nicaragua	173.95	39.84	0.635	1 721	0.11	-0.44	33
Niger	4.57	0.56	0.274	738	--	-1.10	0
Nigeria	17.43	0.17	0.455	764	2.99	-1.35	0
Norway	0.05	0.01	0.939	19 527	0.04	2.00	0
Oman	1.24	1.04	0.747	--	0.05	1.03	0
Pakistan	292.05	2.61	0.498	1 394	0.06	-0.73	0
Panama	4.24	1.70	0.784	3 871	0.88	-0.24	0
Papua New Guinea	12.76	3.30	0.534	1 580	0.34	-0.90	0
Paraguay	5.19	1.17	0.738	3 922	--	-1.22	0
Peru	110.62	5.22	0.743	3 251	0.20	-0.20	70
Philippines	1 059.86	17.49	0.749	3 332	0.01	-0.52	100
Poland	2.95	0.08	0.828	5 684	--	0.39	0
Portugal	7.29	0.73	0.874	11 176	0.31	1.33	0
Qatar	--	--	0.801	--	--	0.92	0
Republic of Korea	123.48	2.86	0.875	8 880	0.01	0.33	0
Romania	11.14	0.49	0.772	6 219	0.03	-0.34	0
Russian Federation	132.14	0.90	0.775	10 079	0.46	-0.90	0
Rwanda	2.29	0.34	0.395	952	6.29	-0.58	23

TABLE 1 DISASTER RISK INDEX SUMMARY TABLE, 1980 - 2000

	Number of people killed per year	Average number of people killed per million inhabitants	Average HDI 1980-2000	Gross Domestic Product Purchasing Power Parity, 1990	Percentage of population infected by HIV/AIDS virus, 2001	Control of corruption 2002	Average percentage of people affected by conflicts per year, 1980 - 2000
Country Name (alphabetical order)	Killed per Year	Killed per million	HDI <sub>av</sub> *	GDPcap (ppp)	%	Corruption	%population
Saint Kitts and Nevis	0.29	6.91	--	6 334	--	0.40	0
Saint Lucia	2.76	21.74	--	4 360	--	0.40	0
Saint Vincent and the Grenadines	0.14	1.37	--	3 631	--	0.40	0
Samoa	1.00	6.28	0.701	4 325	--	-0.06	0
Sao Tome and Principe	0.00	0.00	--	--	--	-0.25	0
Saudi Arabia	1.52	0.13	0.754	9 401	--	0.57	0
Senegal	8.90	1.22	0.423	1 199	0.27	-0.17	6
Seychelles	0.24	3.08	--	--	--	0.52	0
Sierra Leone	4.05	1.02	0.258	894	3.71	-0.82	24
Singapore	--	--	0.876	12 783	0.08	2.30	0
Slovakia	2.67	0.49	0.831	9 028	--	0.28	0
Slovenia	0.00	0.00	0.874	--	0.01	0.89	3.7
Solomon Islands	5.00	15.42	--	1 801	--	-0.86	0
Somalia	148.62	19.88	--	--	0.47	-1.19	3
South Africa	62.38	1.67	0.702	8 282	11.42	0.36	22
Spain	13.24	0.34	0.908	12 848	0.31	1.46	0
Sri Lanka	27.86	1.66	0.735	2 036	0.03	-0.14	65
Sudan	7 160.00	275.43	0.439	803	1.35	-1.09	65
Suriname	--	--	0.758	2 508	0.89	0.19	0
Swaziland	26.33	34.77	0.583	3 630	17.60	-0.26	0
Sweden	0.00	0.00	0.936	18 284	0.04	2.25	0
Switzerland	0.76	0.11	0.924	24 154	0.27	2.17	0
Syrian Arab Republic	0.00	0.00	0.7	2 215	--	-0.29	4
Taiwan	134.33	6.36	--	--	--	0.81	0
Tajikistan	82.95	14.64	0.66	2 796	0.00	-1.07	15
Thailand	108.76	1.91	0.757	3 835	1.05	-0.15	11
The former Yugoslav Republic of Macedonia	0.00	0.00	0.766	5 011	--	-0.73	0
Togo	0.14	0.04	0.489	1 400	3.22	-0.68	0
Tonga	0.38	3.97	--	--	--	-0.44	0
Trinidad and Tobago	0.24	0.19	0.798	6 035	1.73	-0.04	0
Tunisia	8.43	1.11	0.714	3 900	--	0.35	0
Turkey	972.24	16.46	0.735	4 834	--	-0.38	3
Turkmenistan	0.00	0.00	0.73	5 962	--	-1.21	0
Tuvalu	0.00	0.00	--	--	--	--	0
Uganda	12.86	0.66	0.435	746	2.50	-0.92	45
Ukraine	3.48	0.07	0.742	6 694	0.51	-0.96	0
United Arab Emirates	--	--	0.809	20 204	--	1.19	0
United Kingdom of Great Britain & Northern Ireland	9.76	0.17	0.923	16 706	0.06	1.97	2
United Republic of Tanzania	22.24	0.75	0.436	453	4.03	-1.00	0
United States of America	253.57	0.97	0.934	23 447	0.32	1.77	0
Uruguay	0.10	0.03	0.828	6 177	0.19	0.79	0
Uzbekistan	4.95	0.22	0.698	--	0.00	-1.03	0
Vanuatu	5.10	33.30	--	2 445	--	-0.44	0
Venezuela	1 449.38	70.54	0.765	5 050	--	-0.94	0
Viet Nam	573.14	8.36	0.682	--	0.17	-0.68	10
Yemen	119.00	9.57	0.468	567	0.05	-0.69	4
Yugoslavia	4.86	0.48	--	--	--	-0.80	0
Zambia	0.00	0.00	0.427	837	10.94	-0.97	0
Zimbabwe	5.05	0.47	0.554	2 336	17.51	-1.17	0

**TABLE 1 DISASTER RISK INDEX SUMMARY TABLE, 1980 - 2000**

	Number of people killed per year	Average number of people killed per million inhabitants	Average HDI 1980-2000	Gross Domestic Product Purchasing Power Parity, 1990	Percentage of population infected by HIV/AIDS virus, 2001	Control of corruption 2002	Average percentage of people affected by conflicts per year, 1980 - 2000
<b>Tributarians Territories (alphabetical order)</b>	Killed per Year	Killed per million	HDI <sub>av</sub> *	GDPcap (ppp)	%	Corruption	%population
American Samoa	1.19	27.78	--	--	--	--	0
Anguilla	0.00	0.00	--	--	--	--	0
Bermuda	0.00	0.00	--	--	--	1.29	0
British Virgin Islands	0.00	0.00	--	--	--	--	0
Cocos (Keeling) Islands	--	--	--	--	--	--	0
Cook Islands	1.19	65.09	--	--	--	--	0
French Guiana	0.00	0.00	--	--	--	--	0
French Polynesia	0.33	2.02	--	18 594	--	--	0
Guadeloupe	0.43	1.09	--	--	--	--	0
Guam	0.05	0.34	--	--	--	--	0
Macau, China	0.00	0.00	--	14 080	--	-0.07	0
Martinique	0.48	1.33	--	--	--	--	0
Montserrat	0.52	48.73	--	--	--	--	0
New Caledonia	0.29	1.76	--	19 745	--	--	0
Netherlands Antilles	0.10	0.49	--	--	--	--	0
Niue	0.00	0.00	--	--	--	--	0
Puerto Rico	25.81	7.22	--	--	--	1.19	0
Reunion	2.90	4.87	--	--	--	--	0
Tokelau	0.00	0.00	--	--	--	--	0
Turks and Caicos Islands	0.00	0.00	--	--	--	--	0
United States Virgin Islands	0.52	4.49	--	--	--	--	0
Wallis and Futuna	0.29	21.18	--	--	--	--	0

**Source:**

Columns 1 and 2: EM-DAT: The OFDA/CRED International Disaster Database

Column 3: calculated by UNDP/BCPR and UNEP/GRID-Geneva for this report. For details, see note below

Column 4: calculated by UNDP/BCPR and UNEP/GRID-Geneva from World Development Indicators (World Bank), "ppp", purchasing power parity

 Column 5: UNAIDS "Report on the global HIV/AIDS epidemic July 2002. For details, see <http://www.unaids.org/barcelona/presskit/barcelona%20report/contents.html>

Column 6: World Bank estimates (From +2.5 maximum control of corruption to -2.5 minimum control of corruption).

 World Bank Governance Matters III: updated indicators for 1996-2002. For more details see <http://www.worldbank.org/wbi/governance>

 Column 7: Armed Conflict 1946-2001, International Peace Research Institute, Oslo (PRIO), For more detailed information see <http://www.prio.no/cwp/armedconflict>
**\*Note:** Human Development Index has been adjusted as follows:  $HDI_{av} = (\text{Sum } K_i HDI_i) / (\text{Sum } K_i)$ 

 Where "K" is the number of people killed by this disaster, "i" is the year and HDI<sub>i</sub> is the HDI linearly extrapolated from the standard 5-year interval HDI.

TABLE 2 DISASTER RISK FOR DROUGHTS, 1980 - 2000

	Average number of events per year	Number of people killed per year	Average number of people killed per million inhabitants	Average physical exposure per year	Physical exposure in percentage of population	Relative Vulnerability	Percentage of total population with access to safe water
Country Name	Event per year	Killed per year	Killed per million	People per year	%	Killed per million exposed	%
Democratic People's Republic of Korea	0.10	12 857.14	579.43	763174	3.44	16 846.94	--
Mozambique	0.43	4 764.29	357.06	878 635	6.58	5 422.37	60.0
Ethiopia	0.57	14 303.19	286.24	2 756 273	5.52	5 189.32	23.0
Sudan	0.48	7 142.86	294.05	2 478 870	10.20	2 881.50	71.0
Mauritania	0.33	106.81	57.86	172 159	9.33	620.41	37.0
Chad	0.33	142.86	27.87	514 050	10.03	277.91	27.0
Somalia	0.24	29.57	4.14	726 181	10.17	40.72	--
Madagascar	0.24	9.52	0.78	324 977	2.66	29.31	45.5
Uganda	0.29	5.48	0.29	242 373	1.30	22.59	47.0
Papua New Guinea	0.14	4.67	1.16	436 919	10.83	10.68	42.0
China	0.86	161.90	0.14	26 855 212	2.31	6.03	73.0
Guinea	0.14	0.57	0.10	161 647	2.73	3.54	46.5
Kenya	0.29	4.05	0.16	1 219 322	4.97	3.32	44.5
Indonesia	0.29	60.29	0.34	29 982 870	16.77	2.01	72.5
Burundi	0.10	0.29	0.05	269 943	4.28	1.06	65.0
Pakistan	0.05	6.81	0.05	9 811 893	6.95	0.69	86.0
India	0.38	19.52	0.02	3 3701 757	3.91	0.58	83.0
Brazil	0.43	0.95	0.01	10 345 734	6.89	0.09	84.5
Philippines	0.24	0.38	0.01	8 240 940	13.39	0.05	87.0

Source: Columns 1, 2 and 3: EM-DAT: The OFDA/CRED International Disaster Database; Columns 4, 5, and 6: calculated by the IRI of Columbia University, UNDP/BCPR and UNEP/GRID-Geneva for this report. For details, see technical annex; Column 7: UNEP/GRID-Geneva, calculated from WHO figures. For more details see <http://geodata.grid.unep.ch>

**TABLE 3 DISASTER RISK FOR EARTHQUAKES, 1980 - 2000**

	Average number of events per year*	Number of people killed per year	Average number of people killed per million inhabitants	Average physical exposure per year	Physical exposure in percentage of population	Relative Vulnerability	Percentage of Urban growth (as average for 3-year period)
Country Name	Event per year	Killed per Year	Killed per million	People per year	%	Killed per million exposed	%
Armenia	0.05	1 190.48	343.96	155 560	4.49	7 652.82	0.03
Iran (Islamic Republic of)	1.43	2 250.81	38.68	2 094 097	3.60	1 074.84	0.15
Yemen	0.10	72.29	6.90	95 423	0.91	757.53	0.24
Turkey	0.76	949.86	15.58	2 745 757	4.50	345.94	0.15
Afghanistan	0.81	399.95	2480	1 749 097	0.11	228.1	0.13
India	0.67	576.52	0.73	2 730 309	0.35	211.16	0.09
Italy	0.52	225.71	3.98	1 288 265	2.27	175.21	0.00
Russian Federation	0.29	95.29	0.65	658 876	0.45	144.62	0.03
Algeria	0.38	137.19	5.79	1 252 109	5.28	109.57	0.14
Mexico	0.76	427.24	5.05	4 145 529	4.90	103.06	0.08
Nepal	0.10	38.52	2.42	512 716	3.22	75.14	0.19
Georgia	0.14	13.29	2.44	286 210	5.25	46.42	0.04
El Salvador	0.10	53.33	11.23	1 272 919	26.81	41.90	0.07
Pakistan	0.62	30.95	0.30	793 845	0.77	38.99	0.14
Egypt	0.10	27.19	0.45	834 006	1.38	32.60	0.08
Colombia	0.48	85.05	2.34	2 663 322	7.33	31.93	0.09
Bolivia	0.14	5.95	0.86	186 491	2.69	31.92	0.13
Australia	0.14	1.10	0.07	40 727	0.25	26.89	0.04
China	2.10	92.24	0.08	3 493 705	0.30	26.40	0.13
South Africa	0.14	1.62	0.05	82 467	0.25	19.63	0.08
Ecuador	0.43	28.33	2.75	1 542 854	14.97	18.36	0.12
Panama	0.05	1.43	0.58	95 128	3.89	15.02	0.08
Kyrgyzstan	0.10	2.76	0.62	227 769	5.10	12.13	0.04
Indonesia	1.62	193.24	1.04	16 301 764	8.80	11.85	0.15
Venezuela	0.14	4.62	0.25	435 949	2.34	10.60	0.09
Japan	1.14	281.29	2.31	30 855 862	25.39	9.12	0.02
Philippines	0.57	120.57	2.03	16 228 511	27.30	7.43	0.14
Peru	0.62	13.00	0.62	1 844 498	8.81	7.05	0.08
Greece	0.62	11.29	1.11	1 621 341	15.89	6.96	0.03
Nicaragua	0.14	8.86	2.05	1 515 588	35.13	5.84	0.11
Uganda	0.14	0.33	0.02	62 081	0.35	5.37	0.16
Azerbaijan	0.14	1.52	0.19	439 907	5.51	3.46	0.04
Malawi	0.05	0.43	0.05	13 0484	1.44	3.28	0.18
Brazil	0.05	0.05	0.00	14 592	0.01	3.26	0.09
Costa Rica	0.33	2.52	0.85	868 232	29.33	2.91	0.11
Chile	0.24	9.48	0.73	4 465 047	34.34	2.12	0.06
Papua New Guinea	0.33	3.10	0.83	1 645 460	44.19	1.88	0.12
Cyprus	0.05	0.10	0.13	58 652	7.89	1.62	0.07
Bangladesh	0.19	1.38	0.01	925 173	0.73	1.49	0.17
Kazakhstan	0.10	0.05	0.00	39 696	0.24	1.20	0.04
United States of America	0.48	6.52	0.03	6 745 799	2.61	0.97	0.04
Uzbekistan	0.10	0.43	0.02	477 708	2.44	0.90	0.05
Belgium	0.10	0.10	0.01	108 164	1.09	0.88	0.01
United Republic of Tanzania	0.05	0.05	0.00	64 343	0.18	0.74	0.22
Guatemala	0.24	1.71	0.20	2 671 752	30.85	0.64	0.10
Argentina	0.05	0.29	0.01	515 880	1.70	0.55	0.06
Romania	0.14	0.52	0.02	1 007 506	4.37	0.52	0.03
Albania	0.14	0.05	0.02	155 688	5.41	0.31	0.07
New Zealand	0.05	0.05	0.01	239 427	7.28	0.20	0.03
Germany	0.05	0.05	0.00	357 730	0.44	0.13	0.02

Source: Columns 1, 2 and 3: EM-DAT: The OFDA/CRED International Disaster Database; Columns 4, 5, and 6: calculated by UNDP/BCPR and UNEP/GRID-Geneva for this report. For details, see technical annex; Column 7: UNEP/GRID-Geneva, calculated from UNDESA: UN Dep. Of Economic and Social Affairs/Population Division.

\*Note: These include events equal or greater than a magnitude of 5.5 on the Richter scale.

**Table 4. Disaster Risk for Floods, 1980 - 2000**

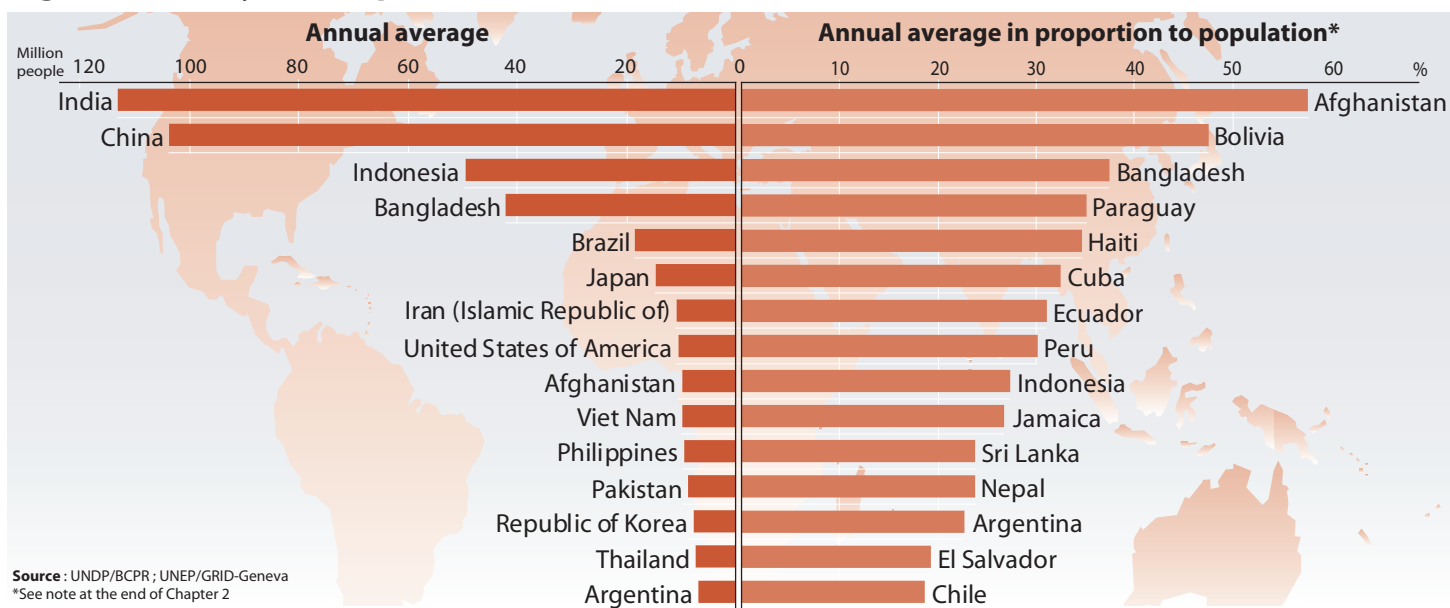
	Average number of events per year	Number of people killed per year	Average number of people killed per million inhabitants	Average physical exposure per year	Physical exposure in percentage of population	Relative Vulnerability	Density of population (living in the watershed exposed to flood)	Gross Domestic Product, per capita, ppp)
Country Name	Event per year	Killed per Year	Killed per million	People per year	%	Killed per million exposed	Inhab. per km <sup>2</sup>	
Venezuela	0.67	1 439.62	68.30	2 927 023	13.89	491.84	41.61	5 082
Somalia	0.52	117.62	15.38	579 679	7.58	202.90	17.64	--
Djibouti	0.19	8.57	18.26	81 203	17.30	105.56	107.14	--
Morocco	0.33	39.62	1.40	384 498	1.36	103.04	102.79	2 650
Bhutan	0.10	10.57	5.44	127 900	6.59	82.65	54.24	336
Papua New Guinea	0.24	2.76	0.72	34 440	0.90	80.19	4.49	1 898
Gambia	0.10	2.52	2.09	31 785	2.63	79.40	51.99	1 340
Egypt	0.14	28.95	0.48	389 815	0.65	74.27	215.39	2 287
Botswana	0.14	1.48	1.07	21 187	1.54	69.67	4.24	4 734
Mozambique	0.33	41.33	2.66	614 559	3.95	67.26	30.38	556
Georgia	0.14	4.81	0.90	82 976	1.55	57.96	91.40	2 353
Uganda	0.14	7.05	0.36	136 561	0.69	51.61	107.41	794
Yemen	0.52	46.71	3.65	936 992	7.33	49.86	43.35	746
Zimbabwe	0.10	5.05	0.41	105 595	0.85	47.80	34.09	2 158
Nepal	0.90	199.38	10.92	4 334 045	23.74	46.00	150.11	927
Puerto Rico	0.10	24.67	7.07	552 327	15.83	44.66	475.90	--
Afghanistan	0.76	420.57	24.63	9 841 123	57.63	42.74	31.17	--
Ghana	0.19	9.95	0.60	258 802	1.56	38.46	43.96	1 391
Guatemala	0.43	38.24	4.02	1 018 818	10.70	37.53	100.15	2 885
South Africa	0.67	54.71	1.38	1 468 803	3.70	37.25	26.89	7 699
Honduras	0.62	30.62	6.09	865 397	17.22	35.38	44.70	2 043
Malawi	0.43	23.33	2.36	721 338	7.31	32.35	95.63	459
Fiji	0.14	1.57	2.10	49 944	6.66	31.46	41.38	3 721
Mexico	1.10	121.19	1.41	4 469 462	5.21	27.12	79.57	6 453
Chad	0.29	4.00	0.63	148 952	2.33	26.85	10.05	705
United Republic of Tanzania	0.71	22.00	0.77	823 825	2.87	26.70	28.51	453
El Salvador	0.33	26.76	4.92	1 050 226	19.31	25.48	271.13	3 159
Cambodia	0.29	48.52	4.08	1 986 049	16.69	24.43	77.04	1 096
Democratic People's Republic of Korea	0.29	28.14	1.35	1 211 567	5.81	23.23	287.89	--
Pakistan	0.95	200.38	1.77	8 773 423	7.73	22.84	185.81	1
Burkina Faso	0.24	2.10	0.23	93 658	1.03	22.37	28.08	713
Czech Republic	0.05	1.38	0.13	62 435	0.61	22.12	130.64	12 296
Slovakia	0.10	2.67	0.49	129 203	2.40	20.64	100.79	7 905
Ethiopia	1.00	27.14	0.50	1 321 588	2.44	20.54	41.75	525
Liberia	0.05	0.48	0.19	23 283	0.93	20.45	24.99	--
Mali	0.29	1.81	0.18	96 590	0.95	18.73	17.19	576
Sudan	0.57	15.52	0.57	829 480	3.02	18.72	14.73	--
Niger	0.29	4.57	0.47	244 500	2.54	18.70	25.00	719
Algeria	0.71	13.33	0.50	741 412	2.80	17.98	67.27	4 394
Cameroon	0.24	1.76	0.13	98 214	0.75	17.94	46.55	1 521
Lesotho	0.14	1.90	1.19	110 141	6.90	17.29	49.90	1 167
Angola	0.24	1.38	0.11	82 348	0.67	16.77	23.36	1 811
Tunisia	0.14	8.43	1.13	512 643	6.85	16.44	90.36	4 090
Peru	1.10	97.62	4.56	6 456 876	30.17	15.12	16.73	3 843
China	5.57	1 490.57	1.32	103 804 314	9.16	14.36	126.61	1 741
Colombia	1.14	47.90	1.34	3 346 973	9.36	14.31	34.46	4 625
Viet Nam	1.00	137.90	1.98	9 720 110	13.95	14.19	223.72	1 427
Moldova, Republic of	0.14	2.67	0.62	193 262	4.47	13.80	136.00	2 876
Saint Vincent and the Grenadines	0.14	0.14	1.37	10 764	10.31	13.27	230.63	3 469
Sierra Leone	0.05	0.57	0.14	44 589	1.09	12.82	158.07	665
Yugoslavia	0.38	3.90	0.38	321 934	3.13	12.13	100.32	--
Iran (Islamic Republic of)	1.90	131.19	2.20	10 903 040	18.26	12.03	45.40	3 932
India	3.86	1 313.24	1.55	113 041 300	13.33	11.62	303.38	1 424
Turkey	0.67	20.90	0.36	1 883 782	3.26	11.10	97.01	4 681

	Average number of events per year	Number of people killed per year	Average number of people killed per million inhabitants	Average physical exposure per year	Physical exposure in percentage of population	Relative Vulnerability	Density of population (living in the watershed exposed to flood)	Gross Domestic Product, per capita, ppp)
Country Name	Event per year	Killed per Year	Killed per million	People per year	%	Killed per million exposed	Inhab. per km <sup>2</sup>	
Kenya	0.24	12.86	0.50	1 169 475	4.54	10.99	120.00	878
Bangladesh	2.00	461.95	4.11	42 168 039	37.51	10.96	912.59	1 014
Thailand	1.33	78.52	1.37	7 436 253	12.99	10.56	131.73	3 952
Lao People's Democratic Republic	0.43	3.29	0.75	337 368	7.70	9.74	20.61	918
Portugal	0.19	3.33	0.34	348 453	3.51	9.57	233.80	10 920
Spain	0.52	8.38	0.21	888 261	2.28	9.44	74.51	12 301
Ecuador	0.38	30.62	2.92	3 261 635	31.10	9.39	43.19	2 695
Philippines	1.76	75.71	1.22	9 301 763	14.96	8.14	256.98	3 191
Romania	0.43	9.24	0.41	1 174 894	5.20	7.86	90.57	5 955
Rwanda	0.05	2.29	0.34	291 406	4.35	7.84	365.88	952
Nicaragua	0.24	2.52	0.60	328 459	7.75	7.68	40.90	2 146
Democratic Republic of the Congo	0.19	3.05	0.07	415 189	0.94	7.34	132.32	--
Republic of Korea	0.71	51.95	1.19	7 579 290	17.31	6.85	503.77	9 243
Sri Lanka	1.29	27.62	1.62	4 064 648	23.85	6.79	290.30	2 142
Benin	0.48	4.67	0.91	714 078	13.95	6.54	58.17	736
Chile	0.57	16.48	1.21	2 540 958	18.72	6.48	43.39	5 512
Kuwait	0.05	0.10	0.06	14 986	0.88	6.36	124.09	9 010
Burundi	0.10	0.57	0.10	95 306	1.61	6.00	300.73	610
Armenia	0.05	0.19	0.05	34 337	0.91	5.55	80.25	1 822
Jordan	0.10	0.81	0.26	146 508	4.63	5.53	94.76	3 498
Brazil	2.19	99.33	0.67	18 304 697	12.33	5.43	24.29	5 623
Jamaica	0.24	3.43	1.45	632 000	26.76	5.42	215.15	3 124
Albania	0.19	0.71	0.22	131 704	4.12	5.42	109.64	2 755
Congo	0.14	0.10	0.03	17 607	0.64	5.41	2.89	699
Ukraine	0.29	3.00	0.06	589 853	1.15	5.09	90.68	5 178
Haiti	0.81	11.90	1.72	2 399 474	34.71	4.96	275.89	1 449
Panama	0.29	0.81	0.32	167 199	6.57	4.84	42.48	4 352
Bolivia	0.48	14.48	2.27	3 035 231	47.57	4.77	6.63	1 868
Italy	0.57	14.00	0.24	2 994 349	5.23	4.68	208.73	16 619
Cote d'Ivoire	0.10	1.33	0.10	285 823	2.12	4.66	178.14	1 413
Malaysia	0.43	4.43	0.24	958 222	5.09	4.62	69.69	5 380
Costa Rica	0.38	1.67	0.51	371 493	11.32	4.49	65.02	5 415
Myanmar	0.29	9.05	0.20	2 166 338	4.88	4.18	100.06	--
Australia	1.10	4.43	0.26	1 087 860	6.33	4.07	8.44	17 293
Central African Republic	0.24	0.33	0.09	86 217	2.44	3.87	6.90	1 009
Russian Federation	1.33	9.24	0.06	2 393 629	1.63	3.86	43.65	8 179
Nigeria	0.62	12.67	0.12	3 555 094	3.28	3.56	133.19	783
Dominican Republic	0.29	3.00	0.42	1 023 241	14.43	2.93	149.03	3 700
France	1.10	5.29	0.09	1 821 024	3.17	2.90	138.87	17 072
Japan	0.62	30.71	0.25	10 925 468	8.86	2.81	478.94	18 629
Austria	0.29	0.90	0.12	336 735	4.39	2.69	108.83	18 289
Greece	0.19	1.19	0.11	482 663	4.58	2.47	102.71	11 148
Indonesia	2.48	120.29	0.67	49 323 896	27.34	2.44	178.57	1 964
Paraguay	0.38	3.62	0.85	1 494 319	35.06	2.42	10.00	3 841
Canada	0.52	1.52	0.05	659 274	2.36	2.31	50.54	19 456
Poland	0.24	2.95	0.08	1 287 600	3.45	2.29	151.05	6 939
United States of America	3.48	24.19	0.09	10 591 826	4.06	2.28	49.48	22 494
Azerbaijan	0.19	0.76	0.10	351 330	4.55	2.17	84.95	3 670
Ireland	0.10	0.14	0.04	77 876	2.20	1.83	111.07	13 641
Hungary	0.24	0.43	0.04	237 148	2.36	1.81	93.35	8 717
Argentina	1.19	11.14	0.34	7 434 608	22.71	1.50	26.78	9 310
Cuba	0.71	5.00	0.47	3 482 880	32.53	1.44	116.93	--
Trinidad and Tobago	0.10	0.24	0.19	173 512	13.80	1.37	269.47	6 247

Country Name	Average number of events per year	Number of people killed per year	Average number of people killed per million inhabitants	Average physical exposure per year	Physical exposure in percentage of population	Relative Vulnerability	Density of population (living in the watershed exposed to flood)	Gross Domestic Product, per capita, ppp)
Country Name	Event per year	Killed per Year	Killed per million	People per year	%	Killed per million exposed	Inhab. per km <sup>2</sup>	
Israel	0.10	0.52	0.09	542 419	9.50	0.97	326.08	14 084
Norway	0.10	0.05	0.01	50 683	1.15	0.94	144.07	20 045
Belgium	0.29	0.33	0.03	386 689	3.85	0.86	425.19	18 814
Togo	0.19	0.14	0.04	187 082	4.61	0.76	57.98	1 344
Switzerland	0.14	0.10	0.01	157 413	2.33	0.61	176.30	21 816
New Zealand	1.10	0.29	0.09	554 050	16.49	0.52	13.76	16 332
Germany	0.38	1.00	0.01	3 976 284	4.94	0.25	280.34	21 848
United Kingdom of Great Britain and Northern Ireland	0.43	0.48	0.01	2 082 205	3.53	0.23	198.75	18 738
Kazakhstan	0.10	0.48	0.03	2 344 290	14.24	0.20	6.74	5 165
Belarus	0.10	0.10	0.01	620 500	6.04	0.15	60.23	6 059
Kyrgyzstan	0.10	0.10	0.02	874 669	18.34	0.11	16.57	2 812

**Source :** Columns 1, 2 and 3 : EM-DAT : The OFDA/CRED International Disaster Database ; Columns 4, 5, and 6 : calculated by UNDP/BCPR and UNEP/GRID-Geneva for this report. For details, see technical annex ; Column 7 : UNEP/GRID-Geneva, calculated from UNEP/GRID-Geneva spatial modelling based on CIESIN population data. For more details see <http://geodata.grid.unep.ch>; Column 8 : UNEP/GRID-Geneva from World Development Indicators (World Bank), "ppp", purchasing power parity.

**Figure 2.12 Physical exposure to floods, 1980 - 2000**



**Figure 2.13 Physical exposure to floods, 1980 - 2000**

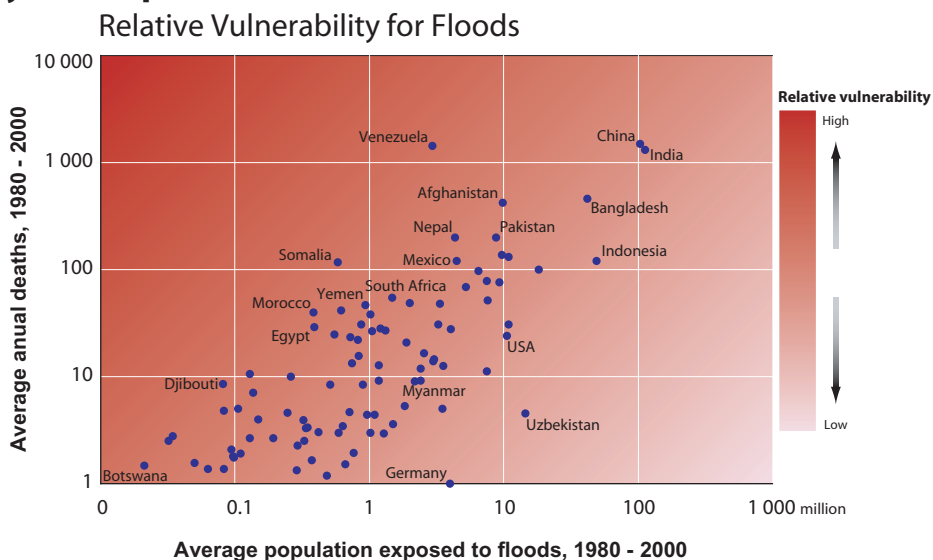


TABLE 5 DISASTER RISK FOR TROPICAL CYCLONES, 1980 - 2000

Country Name	Average number of events per year	Number of people killed per year	Number of people killed per million inhabitants	Average physical exposure per year	Physical exposure in percentage of population	Relative Vulnerability	Percentage of Arable Land	Average HDI 1980-2000
	Event per year	Killed per Year	Killed per million	People per year	%	Killed per million exposed	%	HDI <sub>av</sub> *
Honduras	0.19	702.29	139.65	2 185 215	43.45	321.38	16.44	0.61
Nicaragua	0.33	162.57	37.39	804 228	18.50	202.15	17.92	0.60
Cape Verde	0.10	1.52	5.07	18 402	6.12	82.80	10.21	0.65
Swaziland	0.05	2.52	4.04	34 728	5.56	72.67	10.26	0.59
Bangladesh	3.43	7 467.62	64.02	135 835 143	116.45	54.98	67.77	0.41
El Salvador	0.19	23.43	3.90	847 932	14.12	27.63	38.56	0.64
Comoros	0.19	2.81	5.97	137 528	29.25	20.43	49.81	0.50
Haiti	0.29	81.24	11.63	6 269 306	89.77	12.96	32.82	0.45
Pakistan	0.62	53.90	0.46	4 697 462	4.04	11.48	27.40	0.44
Malaysia	0.10	12.86	0.60	1 368 871	6.41	9.39	19.91	0.72
Papua New Guinea	0.10	2.24	0.52	289 367	6.76	7.73	1.32	0.49
Fiji	0.67	5.71	7.99	1 012 072	141.57	5.65	12.87	0.72
Viet Nam	2.24	435.24	6.40	77 521 410	114.01	5.61	20.60	0.63
Mozambique	0.33	22.10	1.41	4 698 084	29.88	4.70	4.17	0.31
Madagascar	0.71	48.81	3.87	11 638 792	92.36	4.19	5.27	0.44
Belize	0.10	0.67	3.01	176 043	79.48	3.79	3.05	0.75
Costa Rica	0.19	4.29	1.22	1 196 901	34.15	3.58	10.04	0.79
Philippines	5.57	863.19	14.35	259 304 805	430.94	3.33	32.99	0.71
Guatemala	0.05	18.29	1.69	6 226 716	57.65	2.94	16.87	0.58
India	2.76	1 022.52	1.24	352 431 552	42.75	2.90	56.94	0.51
Dominican Republic	0.38	19.19	2.68	6 889 529	96.30	2.79	30.72	0.68
United States of America	12.14	222.86	0.86	89 407 185	34.41	2.49	20.23	0.91
Thailand	0.71	30.24	0.54	12 739 238	22.84	2.37	38.38	0.71
Republic of Korea	1.00	71.52	1.67	37 649 377	87.85	1.90	20.98	0.81
Jamaica	0.24	3.14	1.34	2 169 085	92.57	1.45	22.52	0.72
Colombia	0.14	1.48	0.05	1 180 056	3.68	1.25	4.66	0.72
Mexico	1.57	80.76	0.93	65 081 375	74.78	1.24	13.64	0.76
Australia	2.38	4.43	0.26	3 666 088	21.72	1.21	6.26	0.90
Venezuela	0.10	5.14	0.26	6 534 046	33.13	0.79	4.20	0.75
China	6.90	428.38	0.37	579 217 240	49.51	0.74	13.50	0.63
Lao People's Democratic Republic	0.19	2.67	0.60	4 554 774	102.72	0.59	3.75	0.42
New Zealand	0.29	0.48	0.13	848 108	23.87	0.56	13.03	0.88
Japan	1.95	39.29	0.32	226 166 900	184.04	0.17	14.26	0.90

Source: Columns 1, 2 and 3: EM-DAT: The OFDA/CRED International Disaster Database; Columns 4, 5, and 6: calculated by UNDP/BCPR and UNEP/GRID-Geneva for this report. For details, see technical annex; Column 7: UNEP/GRID-Geneva, calculated from FAOSTAT; Column 8: Calculated by UNEP/GRID-Geneva, for details see note below

\*Note: Human Development Index has been adjusted as follows:  $HDI_{av} = (\sum K_i HDI_i) / (\sum K_i)$

Where "K" is the number of people killed by this disaster, "i" is the year and HDI<sub>i</sub> is the HDI linearly extrapolated from the standard 5-year interval HDI.